National Library
of Canada

Canadian Theses Service

Ottawa, Canada
K1A 0N4

Bibliothèque nationale
du Canada

Services des thèses canadiennes

CANADIAN THESES

THÈSES CANADIENNES

NOTICE

The quality of this microfiche is heavily dependent upon the quality of the original thesis submitted for microfilming. Every effort has been made to ensure the highest quality of reproduction possible.

If pages are missing, contact the university which granted the degree.

Some pages may have indistinct print especially if the original pages were typed with a poor typewriter ribbon or if the university sent us an inferior photocopy.

Previously copyrighted materials (journal articles, published tests, etc.) are not filmed.

Reproduction in full or in part of this film is governed by the Canadian Copyright Act, R.S.C. 1970, c. C-30. Please read the authorization forms which accompany this thesis.

AVIS

La qualité de cette microfiche dépend grandement de la qualité de la thèse soumise au microfilmage. Nous avons tout fait pour assurer une qualité supérieure de reproduction.

S'il manque des pages, veuillez communiquer avec l'université qui a conféré le grade.

La qualité d'impression de certaines pages peut laisser à désirer, surtout si les pages originales ont été dactylographiées à l'aide d'un ruban usé ou si l'université nous a fait parvenir une photocopie de qualité inférieure.

Les documents qui font déjà l'objet d'un droit d'auteur (articles de revue, examens publiés, etc.) ne sont pas microfilmés.

La reproduction, même partielle, de ce microfilm est soumise à la Loi canadienne sur le droit d'auteur, SRC 1970, c. C-30. Veuillez prendre connaissance des formules d'autorisation qui accompagnent cette thèse.

THIS DISSERTATION
HAS BEEN MICROFILMED
EXACTLY AS RECEIVED

LA THÈSE A ÉTÉ
MICROFILMÉE TELLE QUE
NOUS L'AVONS REÇUE

NL 339 (r. 86/01)

Canada

19

0-315-26752-6

National Library of Canada | Bibliothèque nationale du Canada

Canadian Theses Division | Division des thèses canadiennes

Ottawa, Canada
K1A 0N4

PERMISSION TO MICROFILM — AUTORISATION DE MICROFILMER

- Please print or type — Écrire en lettres moulées ou dactylographier

Full Name of Author — Nom complet de l'auteur
Kathryn M. M. Kermack-Chandler

Date of Birth — Date de naissance
March 14, 1958

Country of Birth — Lieu de naissance
Canada

Permanent Address — Résidence fixe
#2101 11135 83 Ave
Edmonton, Alberta T6G 2C6

Title of Thesis — Titre de la thèse
Upholstered Furniture: Effect of Consumer Information and Education on Cognition and Choice

University — Université
University of Alberta

Degree for which thesis was presented — Grade pour lequel cette thèse fut présentée
MSc.

Year this degree conferred — Année d'obtention de ce grade
1983

Name of Supervisor — Nom du directeur de thèse
Dr. Betty Crown

Permission is hereby granted to the NATIONAL LIBRARY OF CANADA to microfilm this thesis and to lend or sell copies of the film.

The author reserves other publication rights, and neither the thesis nor extensive extracts from it may be printed or otherwise reproduced without the author's written permission.

L'autorisation est, par la présente, accordée à la BIBLIOTHÈQUE NATIONALE DU CANADA de microfilmer cette thèse et de prêter ou de vendre des exemplaires du film.

L'auteur se réserve les autres droits de publication; ni la thèse ni de longs extraits de celle-ci ne doivent être imprimés ou autrement reproduits sans l'autorisation écrite de l'auteur.

Date
August 30, 1983

Signature
Kathryn Chandler

NL-91 (4/77)

THE UNIVERSITY OF ALBERTA

UPHOLSTERED FURNITURE: EFFECT OF CONSUMER INFORMATION AND EDUCATION ON COGNITION AND CHOICE

by

© KATHRYN M. M. KERMACK-CHANDLER

A THESIS
SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH
IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE
OF MASTER OF SCIENCE
IN
CLOTHING AND TEXTILES

FACULTY OF HOME ECONOMICS

EDMONTON, ALBERTA
FALL 1983

THE UNIVERSITY OF ALBERTA

RELEASE FORM

NAME OF AUTHOR KATHRYN M. M. KERMACK-CHANDLER

TITLE OF THESIS UPHOLSTERED FURNITURE: EFFECT OF CONSUMER INFORMATION AND EDUCATION ON COGNITION AND CHOICE

DEGREE FOR WHICH THESIS WAS PRESENTED MASTER OF SCIENCE

YEAR THIS DEGREE GRANTED FALL 1983

Permission is hereby granted to THE UNIVERSITY OF ALBERTA LIBRARY to reproduce single copies of this thesis and to lend or sell such copies for private, scholarly or scientific research purposes only.

The author reserves other publication rights, and neither the thesis nor extensive extracts from it may be printed or otherwise reproduced without the author's written permission.

(SIGNED) Kathryn Chandler

PERMANENT ADDRESS:

#2101, 11135 - 83 Avenue
Edmonton, Alberta
T6G 2C6

DATED August 29 1983

THE UNIVERSITY OF ALBERTA
FACULTY OF GRADUATE STUDIES AND RESEARCH

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research, for acceptance, a thesis entitled UPHOLSTERED FURNITURE: EFFECT OF CONSUMER INFORMATION AND EDUCATION ON COGNITION AND CHOICE submitted by KATHRYN M. M. KERMACK-CHANDLER in partial fulfilment of the requirements for the degree of MASTER OF SCIENCE in CLOTHING AND TEXTILES.

Betty Crown
Supervisor
N. Fetterman
M. James Dunn

Date August 16, 1983

ABSTRACT

Upholstered Furniture: Effect of Consumer Information and
Education on Cognition and Choice
by
Kathryn M. M. Kermack-Chandler
University of Alberta, 1983

Professor: Dr. Elizabeth M. Crown
Faculty: Home Economics
Department: Clothing and Textiles

The purpose of this study was to design and test strategies for the provision of consumer information (CI) and consumer education (CE) on textile product safety using the example of upholstered furniture. More specifically, effects of different CE/CI strategies on consumers' awareness and understanding of textile flammability as well as their evaluations of and choice among alternative upholstery fabrics were examined.

The EKB model of a high-involvement decision process (Engel and Blackwell, 1982: p 500) was used as the conceptual framework for the study.

A total of 448 households from both Edmonton and Winnipeg participated in the study. Subjects' knowledge of upholstery fabric serviceability and textile flammability was measured before and after the administration of the different CE and CI treatments. Also measured was their choice behaviour in a simulated purchase experience. Demographic and socioeconomic information was also recorded. Two-way analysis of variance, analysis of covariance and chi-square statistics were used to test the null hypotheses.

Findings indicated that CE had a significant effect on knowledge gain with the presentation being the more effective consumer education strategy, but although subjects showed increases in awareness and knowledge, their choice behaviour regarding FR fabrics did not differ significantly among CE groups. The consumer information treatment based on the British system of flammability labelling was found to have the most effect on consumer response. The durability labels were effective in terms of selection of an appropriately durable fabric but they tended to overshadow the effectiveness of the UFAC flammability labels.

Demographics and socioeconomic status were found to have some influence on the dependent variables measured.

Implications of these findings for policy decisions and further research are discussed.

ACKNOWLEDGEMENTS

Sincere gratitude is expressed to Dr. Betty Crown, major professor, for her energy and enthusiasm as well as her unyielding guidance throughout the study. Very special thanks are extended to Dr. Nelma Fetterman, Department of Clothing and Textiles, for her encouragement and attention to detail, and to Dr. James Dunn, Faculty of Business, for his valuable perspective and interest in the study.

Appreciation is extended to the graduate students and staff in the Department of Clothing and Textiles for two very rewarding years full of support and companionship.

Special thanks are given to my parents for their constant encouragement and respect for higher learning.

Deepest appreciation is extended to my husband, Rick, for his love and support throughout the graduate program as well as for the infinite hours he spent as my computer consultant.

Finally, the author gratefully acknowledges funding provided by Consumer and Corporate Affairs Canada without which this research would not have been possible.

Table of Contents

Chapter Page

I. INTRODUCTION 1

A. Statement of the Problem 2

B. Justification 2

C. Objectives 4

D. Null Hypotheses 4

E. Definitions 5

II. REVIEW OF THE LITERATURE 7

A. Role of Consumer Information and Consumer Education in the Decision Process 7

B. Consumer Information 8

Definition and Purpose 8

Consumer Desire for Consumer Information 10

Consumer Use of Consumer Information 11

Effect of Label Information on Consumer Knowledge and Choice 14

Need For Education and Promotion of Consumer Information Programs 18

Need for Labelling Varies across Products 19

C. Consumer Information / Consumer Education Interface 20

Consumer Education - Definition and Purpose 20

Effect of Consumer Education Efforts to Date 21

Effect of Consumer Information/Consumer Education Combined 23

D. Summary 24

III. METHODS AND PROCEDURES 26

A. Conceptual Framework 26

B. Method 29

Subjects 31

Consumer Education (CE) Treatments 32

Consumer Information (CI) Treatments 34

Product: Upholstery Fabric 35

Choice Exercise 36
Selection and Training of Interviewers 36
Demographic, Socioeconomic and Lifestyle Variables 37
Dependent Measures 37
Data Analysis 37
IV. FINDINGS 40
- A. Profile of the Subjects 40
- B. Descriptive Analysis of the Variables 45
- C. Testing of the Null Hypotheses 58
  - Consumer Education/Consumer Information and Knowledge Gain 58
  - Consumer Education/Consumer Information and Number of Salient/Important Dimensions 60
  - Consumer Education/Consumer Information and Intention To Buy 62
  - Consumer Education/Consumer Information and Fabric Selected 65
  - Consumer Education/Consumer Information and Choice Efficiency 67
- D. Analysis of Other Variables of Interest 70

V. DISCUSSION 77
- A. Design of CE/CI Strategies 77
- B. Testing of CE/CI Strategies 77
  - Cognition 78
  - Choice 81

VI. SUMMARY, CONCLUSIONS AND RECOMMENDATIONS 85
- A. Summary 85
- B. Conclusions 87
  - Limitations 89
- C. Recommendations 90
  - Consumer Education 90
  - Consumer Information: Labels 90
  - Further Research 91

BIBLIOGRAPHY 93

APPENDICES 98
APPENDIX A 99
APPENDIX B 101
APPENDIX C 105
APPENDIX D 110
APPENDIX E 113
APPENDIX F 115

List of Tables

Table Page

1. Experimental Design: CI and CE Strategies 30

2. Summary of Statistical Analysis 39

3. Frequency and Percentage Distribution of Participant Type During the Choice Exercise and Total Income for the 448 Households Participating 41

4. Frequency and Percentage Distribution of Respondents' Sex, Employment Status, Occupation and Education 42

5. Mean Age and Years of Schooling for the 448 Households Participating 44

6. Distribution of Participating Households by CE/CI Strategy 46

7. Chi-square Analysis of Association of Respondents' Education, Employment Status, Occupation and Income with CE Treatment 47

8. One-Way Analysis of Variance of Differences Among CE Treatments in Schooling, Age, Pre-Test Scores and Experience 47

9. Respondents' Mean Scores on Pre-test, Post-test and Upholstered Furniture Purchase Experience 48

10. Respondents' Change in Knowledge of Upholstered Furniture Flammability and Serviceability as Calculated by Post-test Minus Pre-test Score 49

11. Salience and Importance of Product Attributes in Choice of Upholstery Fabrics 50

12. Total Number of Salient and Important Dimensions Mentioned by Respondents Before and During the Choice Exercise 52

13. Upholstery Fabrics: Respondents' Frequency of Selection and Likelihood to Buy Each Fabric 54

14. Respondents' Intended Use Conditions for Fabric Selected During the Choice Exercise 55

15. Appropriateness for Intended Use of Fabric Selected During the Choice Exercise 56

16. Reasons Given for Choosing Fabric Selected During the Choice Exercise..........57

17. Analysis of Covariance: The Effect of Consumer Education and Consumer Information on Knowledge Gain..........59

18. Two-Way Analysis of Variance: The Effect of Consumer Education and Consumer Information on Number of Salient and Important Dimensions....61

19. Two-Way Analysis of Variance: The Effect of Consumer Education and Consumer Information on Respondents' Likelihood to Buy Each Fabric.......63

20. Chi-square Analysis of the Association Between Consumer Education and Consumer Information and Fabric Chosen..........66

21. Chi-square Analysis of the Association Between Consumer Education and Consumer Information and Appropriateness of Chosen Fabric For Intended Use..........68

22. Chi-square Analysis of the Association Between Consumer Education and Consumer Information and Respondents' Label Awareness.........71

23. Frequency and Percentage Distribution of Pamphlet Recipients Reporting Having Read Pamphlet..........72

24. Chi-square Analysis of Association Between Smoking and Selection of a Flame Retardant Fabric..........73

25. Chi-square Analysis of the Association Between Consumer Education and the Salience of Specific Attributes..........75

26. Chi-square Analysis of the Association Between Consumer Information and the Importance of Specific Attributes..........76

List of Figures

Figure Page

1. Assignment of Decision–Making Units to CE/CI Strategies 33

I. INTRODUCTION

Increasing concern is being expressed about the flammability hazard of upholstered furniture. A review of fire statistics from three Canadian provinces over a period of several years shows that upholstered furniture was the material first ignited in 5.3–6.3% of all fires, accounting for 11.3–14.9% of all fire deaths and 2.3–3.1% of all fire property losses – more than any other material under examination by the Product Safety Branch of Consumer and Corporate Affairs Canada.[1] Examination of policy issues regarding furniture flammability regulation and labelling is warranted in light of such statistics. At present, Canada has no specific regulatory program for upholstered furniture flammability.

In the United Kingdom, all upholstered furniture must be resistant to ignition by cigarettes and must be labelled as to its resistance (or lack thereof) to small flame ignition. In the U.S.A., the federal government had originally proposed to regulate upholstered furniture, but the Consumer Product Safety Commission has accepted instead, on a trial basis, a voluntary program operated by the Upholstered Furniture Action Council (UFAC). This voluntary program is based on a fabric classification scheme, construction improvements, a labelling plan and a compliance procedure.

If the UFAC program is successful and a high compliance rate achieved in the U.S.A., furniture not meeting the UFAC standard might well be imported into Canada. Thus, it is now urgent that some specific standard be developed for the flammability of upholstered furniture sold in Canada. The question remains, however, whether such a standard should be mandatory or voluntary.

---

[1] These statistics are summarized in "Upholstered Furniture Flammability Program", an unpublished working paper of the Product Safety Branch of Consumer and Corporate Affairs Canada.

A. Statement of the Problem

Knowledge of consumers' probable reactions to industry's provision of information indicating compliance or non-compliance with a voluntary flammability standard should be useful in evaluating the possible effect of such a voluntary scheme. Because of the possibility of information overload (i.e. too much information to comprehend at once) consumer use of such compliance information may be affected by provision of other disclosures that the upholstered furniture industry may be asked to supply - for example, durability ratings.[2]

This study was built on findings from previous studies of consumer behaviour with respect to textile product flammability (specifically, studies of information search and alternative evaluation; Crown and Brown, 1981a, 1981b; Brown and Crown, 1983; Horne and Crown, 1983). The purpose of the study was to design and test strategies for the provision of consumer information (CI) and consumer education (CE) on textile product safety using the example of upholstered furniture.

B. Justification

For a sample of California consumers, Rucker, McGee, Gorong, O'Reilly and Damant (1980) found that consumers desired furniture flammability standards, but few were willing to pay the increased price associated with a national standard. Rucker (1980) also found California consumers to be generally unknowledgeable about furniture flammability and concluded that consumer education is both needed and apt to be difficult, given consumers' lack of desire for information on flammability.

Crown and Brown (1981a) used conjoint analysis on preference data from a sample of Edmonton consumers to study flame retardance as an evaluative criterion, and found that when some upholstery fabrics and blankets were labelled flame retardant, flame retardance was more important to consumers than were price, care instructions or hand. This finding was supported by a more recent replication with a larger stratified random sample of Alberta consumers (Crown and Brown, 1981b), but was not supported by a

---

[2] See for example, National Standard of Canada, CAN2-130.7-M80, Consumer Informative Labelling of Upholstery Fabrics for Furniture.

Manitoba replication (Brown and Crown, 1983). Perhaps consumers who do not normally think about flame retardance make assumptions about the safety of textile products, assumptions they are forced to alter when confronted with a flame retardant label on some products, in contrast to the lack of one on others.

Crown and Brown (1981b) and Brown and Crown (1983) also studied consumers' attitudes toward flammability and its regulation, and found generally high agreement with the importance of protection from flammability, preference for flame retardant household textile products and the need for both flame retardant labelling and government regulation.

In a study of consumer information sources for home furnishing textile products, Horne (1980) found that 90% of respondents wanted to be able to identify flame retardant products, including upholstered furniture. The preferred source for this information was the product label. Horne also found, however, that at least 50% of respondents did not use the information already provided on labels.

Considerable research effort has been spent studying consumer use of information. Sproles, Geistfeld and Badenhop (1978, 1980) found that the most efficient consumers (those making the "best" choice) were those who used the most information, but this finding was dependent on the quality of the information provided and its relevance to the consumer. Many other studies have suggested that provision of information does not significantly affect consumer choice. Such findings often lead to the suggestion that consumer education is needed if consumer information is to have its desired effects.

Crosby and Taylor (1981) studied the effect of consumer information (wear rating labels) and consumer education (pamphlets) on product performance expectation and preference for carpets. Information was found to influence product performance expectations and preferences of males but not of females. Consumer education affected the number of attributes considered but not the relative importance of such attributes. Although the effect of consumer education on product performance expectations appeared considerable, the result was not statistically significant with the small sample of consumers.

Wilkie (1976) recognized the need for public agencies to evaluate the impact of both consumer information and consumer education programs on consumers and at the same time utilize the results to revise existing, or design future programs.

This study focused on the impact of consumer information (CI) and consumer education (CE) on choice of upholstery fabrics. By understanding the possible combined effects of CI and CE, judgements can be made regarding a voluntary flammability standard for upholstered furniture. The findings should help to assess the necessity, effectiveness and promotional and educational requirements of a voluntary standard and/or labelling program for upholstered furniture as an alternative to mandatory regulation.

C. Objectives

The objectives of the study were:

1. to develop several strategies combining consumer information (CI) and consumer education (CE) on the topics of upholstered furniture and textile flammability; and
2. to measure the effect of these different strategies on:
    a. consumers' awareness and understanding of textile flammability and related issues; and
    b. consumers' evaluations of and choice among selected pieces of upholstery fabric which vary on several factors including resistance to ignition.

D. Null Hypotheses

The following null hypotheses were formulated and have been tested to meet the second objective:

1. Subjects exposed to different CE/CI treatments will not differ significantly in
    a. knowledge gain regarding serviceability and flammability of upholstered furniture;
    b. number of salient and/or important dimensions considered during the choice exercise; or
    c. intention to buy each type of fabric.

2. For each CE treatment, no significant association exists between exposure to different CI treatments and
   a. fabric chosen; or
   b. choice efficiency.

E. Definitions

1. *Cognition*– the process of knowing, which includes both awareness and judgement. In this study cognition was measured in three ways:
   a. Knowledge gain – A post–test identical to a pre–test was administered during the in–home appointment to measure knowledge gain regarding serviceability and flammability of upholstered furniture. This was operationally measured as post–test scores minus pre–test scores (items 4–13(pre–test); items 1–10(post–test), Appendix B).
   b. Number of salient dimensions – those physical product attributes as well as subjective factors the consumer considers salient in the purchase decision. This was operationally defined as responses to question 3, Appendix C.
   c. Number of important dimensions – those physical product attributes as well as subjective factors the consumer considers when faced with actual fabric samples to evaluate and choose from. This was operationally defined as responses to question 4, Appendix C.
2. *Intention to buy* – the likelihood that a consumer would buy each fabric variety. This was operationally measured by the Decision–Making Unit's (DMU's) score for each fabric on the purchase probability scale, question 8, Appendix C.
3. *Choice Efficiency* – selection of an alternative that most closely meets the consumer's needs while, at the same time, maximizing his/her available resources. This was operationally defined in two ways:
   a. Performance suitability of the chosen fabric – whether or not the performance level of the chosen fabric is suitable for the consumer's intended use, as judged by the researcher based on responses to question 6, Appendix C and question 9, Appendix C.

   b. Whether or not the chosen fabric is flame retardant.[3]

4. *Experience* – the sum or cumulative effect of the consumer's past purchases, previous knowledge and satisfaction with previous upholstered furniture purchases and/or use. This was operationally defined as the responses to questions 1 through 3 (previous experience) and questions 4 through 13 (prior knowledge), Pre-test, Appendix B. This measure was used when assigning subjects to CI treatments.
5. *Consumer information* – specific data that are related to individual offerings within the marketplace or to the needs of individual consumers. Informative labelling was the type of consumer information of concern in this study. There were four different CI treatments involved in the experiment.
6. *Consumer education* – the preparation of the consumer as an informed acquirer and user of goods and services. Data disseminated through consumer education efforts are more "generic" in nature than consumer information. There were four different CE treatments involved in the experiment.

---

[3] Although it may be argued that flame retardance is not a measure of choice efficiency because it is not necessarily a consumer need, the researcher feels that for the majority of households flame retardance is a need. For the purposes of this experiment, therefore, choice of a flame retardant fabric constitutes one measure of choice efficiency.

II. REVIEW OF THE LITERATURE

The review of literature is divided into three sections. The first section briefly describes how the concepts of consumer information and consumer education fit into the consumer decision process. The second section is a summary of literature on consumer information. This section is further divided into five subsections covering literature on the definition and purpose of consumer information, consumer desire for and use of information, effect of label information on knowledge and choice, need for education and promotion of consumer information programs and, finally, the varying label requirements across products. The third and last section explores literature related to the relationship between consumer information and consumer education. In this section, consumer education, the effects of consumer education and the combined effects of CI/CE are discussed.

A. Role of Consumer Information and Consumer Education in the Decision Process

This study examined the effect of both consumer information (CI) and consumer education (CE) on choice of upholstery fabric. Before focusing on CI and CE individually it is necessary to view how each relates to the overall decision process.

The EKB model of consumer behaviour (Engel and Blackwell, 1982) was used as the conceptual framework for this study. Central to this model is the decision process which involves five stages: 1) problem recognition, 2) search (both internal and external), 3) alternative evaluation, 4) choice, and 5) outcomes. The stages are not necessarily present in every purchase decision nor is the consumer always aware of each stage as it occurs. The model also depicts the many variables which influence the decision process. These include various elements of the individual's psychological make-up such as knowledge and experience, evaluative criteria, beliefs and attitudes, as well as environmental elements such as income and social class. The variables interact to form a filter through which stimuli are processed and, thus, influence a consumer's decision behaviour.

The focus of this study, the effect of CI and CE on choice of upholstery fabric, is part of two stages in the decision process:

1. the consumer might or might not **seek** label information when selecting upholstery fabric (SEARCH component of the process), and
2. the consumer might or might not **use** label information when selecting upholstery fabric (ALTERNATIVE EVALUATION component of the process).

Determinants of whether or not the consumer will seek out and use label information are numerous and complex. They will be mentioned briefly at this point and explored more fully later in the review of literature.

Factors influencing the search for and use of information which are of particular relevance to this study are:

1. Characteristics of the product – the extent to which product performance can be judged by visual inspection and the number of decisions a consumer must make about the product.
2. Characteristics of the buyer – perceived risk, amount of appropriate stored information, previous experience including both the amount and whether or not it was satisfactory, evoked set of evaluative criteria, beliefs and attitudes.

B. Consumer Information

Definition and Purpose

According to Thorelli, Becker and Engledow (1975) there are basically three sources of product information: personal, commercial and independent. Of these, independent consumer information is defined as data about products and services emanating from organizations which themselves have no economic interest in the sale of these offerings. Thorelli and Engledow (1980) further outline three basic types of independent consumer information: comparative testing – comparing a number of brands in a product category over criteria selected by the testing organization and publishing a fairly extensive summary of the results; informative labelling – permitting a producer to attach to a product a label rating the product's performance in a limited number of product characteristics, as determined by testing carried out by or under conditions specified by the sponsoring organization; and quality certification – allowing the producer to attach a "seal of approval" to any product measuring up to the sponsoring organization's minimum standards for performance and/or included materials. Informative labelling is the type of consumer information dealt with in this study.

Informative labelling may be voluntarily offered by manufacturers, as, for example, are the CCI carpet classification label and the UFAC upholstered furniture flammability label. More often, however, such labelling systems are part of government public policy programs of which nutrition labelling and fibre content labelling are examples.

"The overall objective in the provision of information to the consumer is that it will be pertinent, comprehensive, useful and understandable" (Coney and Patti, 1979). Nourse and Anderson (1973) in their examination of the effects of information labelling on a consumer durable purchase found that various types of consumer information schemes have been implemented, including comparative testing, quality certification and informative labelling. Though consumer information schemes differ in detail, their common goal is informed consumers who can make more intelligent purchase decisions when provided with objective, factual information on the contents and/or performance characteristics of competing products.

As well as helping the individual consumer maximize his/her resources, information schemes can help the marketplace as a whole. Dardis (1980) stated that "The direct benefits from consumer product information include more effective communication of consumer preferences in the marketplace and increased consumption efficiency." Ratchford (1980) quoted Salop and Stiglitz (1977) as saying that relatively large numbers of well informed consumers can discipline the market and poorly informed consumers can benefit directly from the information held by others.

Public policy programs, including informative labelling, have therefore been developed to help alter the consumer information environment and provide neutral examination of competing products. This research attempted in part to study the value of informative labelling in improving the efficiency of consumer choice thus justifying the disclosure of this type of information in the marketplace.

Consumer Desire for Consumer Information

Label information is desired by many consumers. Miller (1978) stated that "There is ample evidence from surveys that consumers want labeling information; there has been favourable response to unit pricing, open dating and nutrient labeling."

Daly (1976) in her study evaluating the response of consumers to nutrition labelling found that consumers were very much in favour of nutrition labelling. An overwhelming majority of respondents perceived the need for labels (91%) and appeared to regard them as a means of enhancing their confidence with food shopping (89%). In a study of consumer information sources for home furnishing textile products, Horne (1980) found that 90% of respondents wanted to be able to identify flame retardant products, including upholstered furniture, and the preferred source for this information was the product label. Crown and Brown (1981b) studied consumers' attitudes toward flammability and its regulation, and found generally high agreement with the importance of protection from flammability, preference for flame retardant household textile products and the need for both flame retardant labelling and government regulation.

Lenehan, Thomas, Taylor, Call and Padberg (1973) documented widespread consumer recognition of non-use benefits from labelling as being part of such favourable response and hypothesized that one reason for this may be that consumers see informative nutrition labels as part of general food industry accountability rather than as an input to the purchase decision. Miller (1978) stated that labelling programs appear to reassure consumers. In general, whether or not consumers use label information in detail, they feel that someone is "checking on" the system.

In many studies, as well as expressing a desire for labels, consumers expressed a willingness to pay extra in order to have such labelling. Lenehan et al.(1973) in their study of consumer reaction to nutrition labels on food products found that, overall, an average of 36% of all respondents indicated a willingness to pay "something" on a $25.00 grocery bill for the labels. Jacoby, Chestnut and Silberman (1977) in their summary of survey research on consumer use and comprehension of nutrition information stated that "... survey research results are consistent: consumers say they want nutrition information, say they would (or do) use it, and say they are willing to pay something extra to get it."

In contrast to these findings, and of interest to this study, are findings of Rucker et al.(1980). For a sample of California consumers, Rucker et al.(1980) found that consumers desired furniture flammability, but few were willing to pay the increased price associated with a national standard.

In summary, though Rucker et als'.(1980) findings shed some doubt on the prospect of flame retardance labelling for upholstered furniture, it appears that for the most part consumers do desire product information in the form of labelling and they are willing, or say they are, to pay something for it.

Consumer Use of Consumer Information

Despite the fact that consumers express a strong desire for label information, a great deal of current research indicates that in reality consumers neither seek out nor use information currently provided.

In their study of consumer use and comprehension of nutrition information, Jacoby, Chestnut and Silberman (1977) summarized their consumer use results by stating that "... we find much lower rates of nutrition information acquisition than was expected from survey results showing high levels of desire for (and purported usage of) nutritional information." As mentioned previously, Horne (1980), reported that 90% of respondents wanted informative labelling for flame retardant products, but Horne also found that at least 50% of respondents did not use the information already provided on labels on textile products. One last example showing non-use is found in research on consumer use of fibre and care information when selecting textile yard goods (Wall, 1978). Wall reported that few consumers (38%) used fibre content information when selecting fabric and even fewer (8%) used care information.

The reason for consumer non-use of informative labelling has been the focus of another stream of research. Andreason and Ratchford (1976) noted three broad sets of factors which ought to determine differences in the extent of information seeking between individuals: need for information, ability to obtain and use information, and personal preference for information seeking.

Several studies to date have indicated that a lack of use of labels is due to a lack of understanding of the labels. Numerous researchers have, in one form or another, echoed the statement that information availability does not mean comprehension (Arbaugh, 1974; Day and Brandt, 1974; Day, 1976; Jacoby et al., 1977). Labels are a means of communicating information to the consumer but they are of little value to the consumer unless he/she knows and comprehends terminology used on the labels and is willing to take the extra time to read and follow the information. "The barriers to comprehension involve issues of communication and education, notably the potential for misinterpretation and the ability of the buyer to absorb the information"(Day, 1976).

In a study titled "Do Consumers Understand Care Labels?", Kincaid and Hatch (1978) concluded that consumers do not understand care labels and do what they consider acceptable. Hatch and Lane (1980) found that even when given the instruction "do not bleach" some respondents indicated that bleaching was acceptable. Many consumers, particularly those from low socioeconomic backgrounds who can least afford to make mistakes when selecting and caring for textiles, have been found to have an inadequate understanding of textile terminology (Arbaugh, 1974).

Misunderstanding and non-use of labels can also result from what is termed "information overload". Individuals face limitations on their ability to deal effectively with large amounts of information within a limited time period (Scammon, 1977). If these limits are exceeded, overload occurs and consumers become confused and make poorer decisions. Hence, too much information can lead to dysfunctional performance. Although some researchers have questioned the empirical evidence in support of information overload (Malhotra, Jain and Lagakos, 1982) the basic proposition is supported by numerous researchers. Scammon (1977) found that subjects made poorer decisions when information about eight nutrients plus calories was provided in the percentage format than when no information about nutrients was provided. Sproles et al.,(1980) in their study of types and amounts of information used by efficient consumers, found that although increased information led to more efficient decisions regarding blankets, this was not the case regarding slow cookers. More information, therefore, is not always better. If there is too much information even consumers who would ordinarily comprehend the information will not use it because it adds complexity to the purchase decision.

Some consumers are simply more apt to use label information when available than are other consumers (Miller, 1978). In general, younger, better educated, higher income households are more likely to use and benefit from label information than are older consumers and minority segments (Thorelli, Becker and Engledow, 1975; Wall, 1978). Information seekers (the information elite) look for and use information on labels (Thorelli, 1971). Information avoiders or cognitive simplifiers (Cox, 1967) avoid such label information, often relying on surrogate indicators of quality such as price or brand name. Consumers, therefore, differ in their motivation and predisposition to use information.

Apart from the differing propensities of various consumers to seek out and use label information, there are individual differences among consumers in terms of information **needs**, both actual and perceived.

Stored information and experience, termed "consumer sophistication" by Sproles, Geistfeld and Badenhop (1978), particularly if it has been satisfactory and is relevant to the present purchase decision, will influence the extent of the consumers' search for and use of information. If a consumer's need for information is filled by the knowledge he/she already has stored in long term memory, search and use of alternative forms of information may be perceived by the consumer as unnecessary. Klopp and MacDonald (1981) in an exploratory study of consumer reasons for non-use of nutrition labels found that absence of need was cited most frequently as a reason for not using nutrition labelling. Nonusers said that they trusted their ability to select nutritious foods without using the label information. Wilkie (1975) noted that one of the reasons for non-use of information is "... consumers' assumption that he/she already knows the information." One would think that if a consumer is unsophisticated he/she would seek and use more information and vice versa. However, Beales, Mazis, Salop and Staelin (1981) suggested that consumers with almost no knowledge about a subject area may ignore subsequent information because they do not have the memory structure necessary to evaluate and interpret the information. Insights into how knowledge and experience affect choice processing are needed to determine what types of information might be most effective for various types of consumers during each phase of information processing (Bettman and Park, 1980).

A consumer's set of evaluative criteria for a product also influence extent of information search and use. Evaluative criteria are those physical product attributes as well as strictly subjective factors the consumer considers important to the purchase decision (Engel and Blackwell, 1982: p 416). If the information provided is relevant to a consumer's evaluative criteria the likelihood of the information being sought and/or used is increased. Cox (1967) proposed that the consumer will follow a predictable process in utilizing relevant information that best reduces the amount of perceived risk in purchasing the product. The consumer assigns value to information based on the predictive value of an informational cue (Cox, 1967). It is often found that consumers cannot distinguish between good and bad cues with confidence. The informational cue will not do them any good no matter how high its theoretical predictive value, if they cannot relate to it.

Nourse and Anderson (1973), during a laboratory experiment focusing on the extent and type of search for information on carpeting, found that carpet buyers were concerned with a variety of product features when making their decision. The results of the research, however, suggested that carpet purchasers do not attach an overwhelming importance to product and performance data provided by an informative label. This study in part evaluated whether or not flame retardance is or becomes (through CI and CE combined) an important evaluative criteria for upholstery fabrics.

In summary, consumers differ in the value they attach to information and the extent to which they use it when making purchase decisions. Use/non-use of informative labelling results from factors that are either consumer oriented (motivation, need and ability to comprehend) or information oriented (availability, content and ease of use).

Effect of Label Information on Consumer Knowledge and Choice

Evaluation of the effect of label information on choice involves a judgement on the part of the researcher as to what constitutes a "better", "more efficient", "improved" choice. An efficient consumer is one who is able to distinguish between various levels based on available information such that the consumer agrees with the objective assessment of quality. Sproles, Geistfeld and Badenhop (1978) further concluded that a direct and realistic measure of efficiency is the consumer's ability to rank products by their level of quality and make a purchase preference using this knowledge.

Consumers differ in their needs, however, and in some experimental situations what is considered an appropriate choice for one consumer may be different from what is considered appropriate for another consumer. Nourse and Anderson (1973) encountered this problem area in their research on the effects of informative labelling on a consumer durable purchase. They realized that ideally, the way to measure whether a consumer is making a better choice is to compare his purchase to the best choice for his particular set of circumstances. Since it was not possible to determine what the best choice for the individual consumer would be, several arbitrary measures of "better" were employed, including a measure that defined better choice as choice of a carpet with a wear rating that matched the subject's end use traffic needs. A measuring system of this type was employed in this research.

Even though there are still inherent imperfections in currently used measures of consumer efficiency, the effect of information on knowledge and choice has been tested and evaluated through a great deal of research to date. Many consumers cannot or do not use label information, but when consumers do, label information has a positive impact on choice. "Empirical evidence clearly shows that consumers can improve their state of knowledge as well as their choice behavior through the use of label information"(Miller, 1978).

Sproles et al.(1980) found that a consumer was more efficient in his/her purchasing activity with the increasing use of information. The more information that was available, the more efficient the purchase decision. Also, in their 1978 study they concluded that marketing information can have a positive influence in making an efficient choice. The more informational cues the consumer receives, the greater the likelihood of an efficient choice. Sproles et al.(1980) contended that there is widespread belief that objective product information uncluttered with distractions or puffery will enhance consumer decision-making. This holds true especially when additional information on a brand's performance and composition are available along with other traditional marketing information.

Results from studies such as those by Sproles et al.(1978, 1980) are not always clear-cut, however. Even though Sproles et al. (1978, 1980) found that more information led to more efficient choices, this finding was dependent on the quality of the information provided and its relevance to the consumer. Nourse and Anderson (1973) found that informative carpet labels had limited impact on carpet choice. The influence of the label tended to be the greatest for wear rating disclosure in two instances. When wear information was presented together with additional less salient information, its influence was greater among higher socioeconomic groups. And, its influence was greater when buyers were alerted to the existence and contents of informative labels prior to shopping. In a study assessing the impact of energy labels, McNeill and Wilkie (1979) noted results showed significant effects of the label on model preference and overall impressions with respect to the energy inefficient model of freezer. But in a stronger test of the effect of the labels they concluded that the results did not lend strong support to the argument that consumers will evidence strong and immediate shifts in purchasing as a result of the availability of this information.

McNeill and Wilkie's (1979) research brings out an important point regarding informative labelling: behavioural effects anticipated as resulting from informative labelling are not always immediately and strongly evident. There exists a hierarchy of effects in which prior cognitive effects are a necessary condition for subsequent changes in attitude and behaviour. One of the most difficult thresholds in this hierarchy is from availability to awareness and comprehension of the information (Day, 1976). Findings of Anderson's (1977) informative carpet labelling experiment were that a hierarchical ordering of consumer responses to informative labelling exists with the greatest impact occurring at the attitudinal and behavioural levels of effect; however, the effects of wear information appear to be most enduring. Provision of information is not always enough to ensure awareness and use. A change in consumers' beliefs and attitudes toward informative labelling is often a prerequisite for use. Such change may only be achieved through continual exposure to educational programs addressing the information.

In addition to the direct uses of information provided by informative labelling it is likely that consumers' knowledge and choice may be improved as informative label elements suggest possible salient dimensions for product evaluation (Miller, 1978). One of the desired effects of informative labelling is a shift from consumers' evaluation of products using subjective criteria to, instead, evaluation of products using more objective, performance oriented criteria.

Crown and Brown (1981a) used conjoint analysis on preference data from a sample of Edmonton consumers to study flame retardance as an evaluative criterion, and found that when some upholstery fabrics and blankets were labelled flame retardant(FR), FR was more important to consumers than were price, care instructions or hand. This finding was supported by a more recent replication with a larger stratified random sample of Alberta consumers (Crown and Brown, 1981b), but a Manitoba replication did not support this finding. In Manitoba, price was found to be the most important attribute followed by hand then flame retardance and ease of care (Brown and Crown, 1983).

Anderson's (1977) research indicated that the aesthetic or subjective product attributes are much more salient to carpet buyers than are functional or objective features such as fibre content, performance and care dimensions of the product. Nourse and Anderson's (1973) results revealed that the existence of labels led consumers to change the number of evaluative criteria considered, but not their relative importance. Rucker (1980) in her survey of California consumers' concerns about furniture flammability found that furniture flammability was one of the least important concerns to prospective furniture customers. Style, durability, comfort, fabric material and colour had the highest ratings.

A significant finding of Cox (1967) relevant to this study was that consumers appear more likely to utilize or respond favourably to performance information when performance uncertainty is high. Rucker (1980) found that the majority of her sample (66%) reported feeling unable to judge the fire resistance of upholstered furniture by inspecting it themselves. In this study, if consumers have difficulty assessing the flame retardance of the various upholstery fabrics, (assuming flame retardance is an evaluative criterion), they may be more likely to use the labels.

To summarize, there exists evidence that informative labelling leads to more efficient purchase decisions but this evidence is not always clear-cut. Behavioural effects are not necessarily clearly evident or immediate. As well as influencing choice efficiency, informative labelling can influence consumers' evaluative criteria, leading the consumer to evaluate products along more objective criteria.

Need For Education and Promotion of Consumer Information Programs

Even though labels themselves may be important educational devices - i.e., calling attention to important product dimensions not otherwise noticed by consumers or informing consumers of the availability of alternatives - nevertheless, mere placement of label information into the marketplace will not guarantee its use by consumers (Miller, 1978). Day and Brandt (1974) concluded with regard to the disclosures of the annual percentage rate required by Truth-in-Lending legislation:

> What is clear, however, is that it is not enough to simply provide consumers with more information. That is simply the first step in a major educational task of getting consumers to understand the information, and persuading them to use it.(p 31)

Day and Brandt's (1974) conclusions continue to be emphasized throughout current research on information effectiveness (Daly, 1976; Chestnut and Silberman, 1977; Scammon, 1977; Wall, 1978; Hatch and Lane, 1980; Klopp and MacDonald, 1981). Arbaugh (1974) identified a need for more textile information being made available to consumers, but also recognized that simply providing information via labels alone cannot fill the consumer information gap. Consumers must be made aware of such label information and use it. Arbaugh (1974) noted that the low awareness and use of the Permanent Care Label should not be taken as evidence against the continuation of the program, but rather as an indication of the need for increased promotional efforts to make consumers aware of the program. Anderson (1977), Hartman (1982) and Grieve (1983) drew similar conclusions regarding the impact of the informative carpet labels and suggested an educational program accompany informative label disclosure to ensure awareness and use of the label resulting in a more efficient purchasing decision.

In addition to increasing awareness and understanding of informative labelling, promotional and educational campaigns can alter existing misconceptions. Rucker (1980) in her research on consumer concerns about furniture flammability noted that some misinformation was apparent in the reasons given for not asking about the flammability of upholstered furniture. Rucker concluded that consumer education is needed in this area. The apparent assumption that the risk of fire declines as the cost of the item increases needs to be corrected (Rucker, 1980). Crown and Brown (1981a) in their study of flame retardance as an evaluative criterion suggested that perhaps consumers who do not normally think about flame retardance make assumptions about the safety of textile products, assumptions they are forced to alter when confronted with an FR label on some products, or in comparison, a lack of one on others.

Of particular pertinence to this study are conclusions made by Rucker (1980) regarding furniture flammability. Rucker (1980) found California consumers to be generally unknowledgeable about furniture flammability and concluded that consumer education is both needed and apt to be difficult, given consumers' lack of desire for information on flammability.

In summary, many researchers have suggested that in order for informative labelling programs to have their full impact, promotional and educational campaigns must be an integral part of the programs. Only with such efforts will consumers' awareness and comprehension of labelling be possible.

Need for Labelling Varies across Products

Not all products necessarily need labels. Labelling information may be unimportant and redundant for some consumer products, important for others, and essential for some. Nelson (1970) divided products into three groups: search, experience and credence goods. Search goods are those whose characteristics may be determined and evaluated by the consumer upon inspection. Experience goods are those whose characteristics or qualities are not known until the consumer has used or consumed them. Credence goods reveal their qualities or characteristics to consumers neither through search nor through experience; some outside expert may be necessary to determine quality levels or the existence or presence of characteristics. Miller (1978) stated that

> Where health and safety are involved or where inspection or experience are not likely to yield information to the consumer about the product's contents or its performance, or where inspection or experience might be too costly, labeling is likely to perform an important informational role.(p 69)

Despite Rucker's (1980) findings regarding consumers' lack of desire for information on furniture flammability, Miller's (1978) comment, above, lends support to the prospect of flame retardance labelling for upholstered furniture. Safety hazards are involved and neither inspection nor experience on the consumer's part is likely to yield information about the flammability hazard of upholstered furniture.

Not all products lend themselves to labelling efforts, but upholstered furniture may be one product for which labelling, specifically flame retardance labelling, is appropriate.

C. Consumer Information / Consumer Education Interface

Consumer Education - Definition and Purpose

> Consumer education is today understood generally as the sum of the concepts, understanding and information to enable the individual to utilize available economic and personal resources for the satisfaction of personal wants and needs.(p ii; Richardson, 1977)

In essence, consumer education is the preparation of the consumer as an informed acquirer and user of goods and services. Distinctions between consumer information and consumer education are not hard and fast; however, the more "generic" the data in terms of product or consumer characteristics, the more likely it is that consumer education is the appropriate term. The more specifically data are related to individual offerings (brands) or to the needs of individual consumers, the more appropriate it is to speak of consumer information (Thorelli, 1978).

The above definition reflects broad based consumer education programs that give consumers education in more general areas such as consumer economics and banking. Consumer education programs, however, can be product specific (i.e., seminars on draperies or upholstered furniture). They are generally established by neutral agencies such as Consumer and Corporate Affairs Canada or Alberta Agriculture. Some private companies however, have organized extensive consumer education programs because they see consumer education as a vehicle for creating more satisfied customers and less government interference with their operations (Bloom and Silver, 1976).

According to Richardson (1977), consumer education is not intended to direct consumer choices. It does provide awareness of alternatives and opportunities and assists the consumer in making the choice which is best for his purposes in light of his values. Nor is it the purpose of consumer education to indoctrinate values. Consumer education should provide the experiences that enable consumers to engage in the process of weighing the evidence necessary to arrive at an intelligent decision.

Effect of Consumer Education Efforts to Date

Research into the effect of consumer education on consumer competency has, until very recently, dealt primarily with the generalized effects of consumer education. In general, Bloom (1976) reported that no reliable evaluation has been reported on how these programs have affected consumer behaviour.

Langrehr and Mason (1977) pointed out that most research to date has revealed that a course in consumer economics or economics does not significantly change a student's consumer competency. Hawkins (1977) in a study of the use of consumer education concepts by high school graduates concluded that a consumer education course had little or no significant effect upon the responses given by the graduates two years after completing the course when compared with the responses given by a similar group who had not taken the course. However, one study by Langrehr (1979) concluded that student consumer economic competencies apparenty can be improved by requiring students to take consumer education. It was also found that the students who had an improvement in their consumer economic competency also developed a more favourable attitude toward business.

Staelin (1978) pointed out that there are a number of reasons why few researchers have evaluated the effect of these programs on behaviour changes. First, many of the programs were initiated by action-oriented individuals who had a very strong prior opinion that education works and thus saw no reason to document this belief. Also, research in this area requires the use of complex experimental designs to control for other confounding or intervening variables. Richardson (1977) noted that no definitive study has been produced that provides the ultimate measure of consumer education. As a consequence, only indirect and partial measurements provide indication of the status of the education of American consumers. Staelin (1978) finally pointed out that it often takes a long time before the program-induced changes in consumer behaviour can be detected, since seldom is the consumer immediately faced with situations that require a change in behaviour.

Staelin's (1978) study of the effects of consumer education on consumer product safety behaviour concluded with mixed results. For actual behaviour, increased knowledge of safety concepts led to significantly safer behaviour. However, there seemed to be no significant relationship between the level of safety knowledge of a student and the student's opinion on how one should behave. Staelin concluded that the program did seem to increase students' abilities to determine the proper type of safety behaviour, although the aggregate effect on changing actual behaviour over a short time span was miniscule.

Brown and Dimsdale (1973) discussed the reasons behind failures in current consumer education programs. They basically concluded that: a) the great majority of consumers are not sufficiently motivated to become informed except on the occasion when they are involved in a purchase decision; b) where programs are conducted they typically deal with general questions of consumption activity or they deal exclusively with products and performance standards of a limited array of goods and the result is most often of little benefit to the individual as he becomes a consumer because it does not relate to his individual problems; and c) little in the way of progress in consumer education can be made until it is determined i) what needs to be known and ii) how best to communicate this to consumers.

With respect to the current state of research in the area of consumer education effectiveness, Bloom, Ford and Harvey (1977) stated that:

> Unfortunately, while much has been written about the **potential** of consumer education, very little has been written about the **achievements** of the numerous existing consumer education programs. There have been few published studies (Staelin, 1974; Uhl, 1970) devoted to evaluating the effects of consumer education programs on the knowledge levels, behavior and satisfaction of consumers. Thus, it is not known whether consumer education has begun to fulfill its potential.(p 388)

Effect of Consumer Information/Consumer Education Combined

The final stream of research to be addressed in the review of literature is that which deals directly with the combined effects of both consumer information and consumer education. The review of literature thus far has indicated that consumers desire information but for a variety of reasons do not use it. As well, though researchers have strongly recommended consumer education as the key to consumer understanding and use of informative labelling, concrete proof of the effectiveness of consumer education is not evident. The question, therefore, remains: does, or will, consumer education increase the understanding, use and effectiveness of informative labelling, as so many people believe?

Research in this area is of particular relevance to this study, but it is limited. Crosby and Taylor (1981) studied the effect of consumer information (wear rating labels) and consumer education (pamphlets) on product performance expectation and preference for carpets. Information was found to influence product performance expectations and preferences of males but not of females. Consumer education affected the number of attributes considered but not the relative importance of such attributes. Although the effect of consumer education on product performance expectations appeared considerable, the result was not statistically significant with the small sample of consumers. The present research resembles that done by Crosby and Taylor (1981) with the major differences being increased complexity in treatments of both CI and CE, as well as a much larger sample.

As mentioned previously in the review of literature, Nourse and Anderson (1973) found that the influence of the label on choice of carpeting tended to be greatest for wear rating disclosure in two instances, one being when buyers were alerted to the existence and contents of informative labels prior to shopping. Alerting consumers to the existence and contents of the labels could be considered a mild form of consumer education.

As stated earlier, there is very little research in this area, and with the number of public policy programs that are continually being contemplated (such as flammability labelling of upholstered furniture), it is clear that a great deal more research is needed in this area to ensure that the costs of such programs are at least matched by the benefits.

D. Summary

A review of related literature reveals a number of important findings that pertain to this study.

1. Consumers desire label information even though they may not use it directly in their purchase decision. Consumers are even willing to pay extra for labelling on many products.
2. Consumers do not presently use label information as much as would be expected. Reasons for this include inability to comprehend the information, irrelevance of the information to the purchase decision, personal motivation and predisposition to use information, no actual or perceived need for information and lack of awareness of the existence of labelling information.
3. Evidence exists that informative labelling leads to more efficient choices but the evidence is not clear-cut. Behavioural effects are not always clearly evident or immediate.
4. Informative labelling has the potential to influence consumers' evaluative criteria, leading consumers to evaluate products along more objective criteria.
5. Consumers' awareness and understanding of label information will in part depend upon the strength of accompanying promotional and educational campaigns.

6. Not all products lend themselves to labelling. Durable goods and goods with safety hazards are likely candidates, however, because performance and safety dimensions are difficult to judge through consumer inspection.
7. There are many researchers that strongly recommend consumer education as a prerequisite for effective information use, but little in the way of concrete research has been done to evaluate its effectiveness.

III. METHODS AND PROCEDURES

This chapter describes the conceptual framework, overview of the research experiment, selection of subjects, description of the CI and CE treatments developed for the study, description of the instruments, methods of data collection and methods of data analysis.

A. Conceptual Framework

The EKB model of consumer behaviour, as revised by Engel and Blackwell (1982), was used as the conceptual framework for this study. The 1982 version of the EKB model distinguishes between high-involvement and low-involvement behaviour in consumer decision-making. High-involvement behaviour is described by Engel and Blackwell (1982) as "extended problem solving behavior when the act of purchase or consumption is seen by the decision maker as having high personal importance or relevance." Purchase of durable goods (such as upholstery fabric in this study) is likely to activate high-involvement behaviour because the product being considered is costly and the risks of a wrong decision are high. Therefore, the EKB model which stresses high-involvement behaviour provided the specific conceptual framework for this study (Engel and Blackwell, 1982: p 500).

The core of this model is the decision process which has five distinct steps: 1) problem recognition; 2) search for information; 3) alternative evaluation; 4) choice; and 5) outcomes of choice. Many variables affect the decision process. These include various elements of the individual's psychological make-up as well as environmental elements. Sections of the model which pertain to this study are the information input, information processing and decision process stages.

Because high-involvement behaviour involves extended problem solving, there is active search for and use of information by the consumer. In this study, respondents' prior knowledge and experience regarding upholstered furniture was recorded. This experience is stored in their memory as information. If a consumer thinks that previous experience is adequate to permit a purchase, an internal search for information within memory may alone take place. If, however, a consumer feels that knowledge about the intended purchase is insufficient, he/she may engage in an external search for information. According to Engel and Blackwell (1982) the major factors that can motivate external search are: "1) the quantity and quality of existing information; 2) ability to recall that information; 3) perceived risk; and 4) confidence in decision-making ability." Because of the time span between purchases and the continual technological changes within the upholstered furniture and textile industries, it is probable that consumers will have inadequate internal information and will conduct an external search, making use of a variety of information sources. In this study this could have entailed seeking out and using the label information provided on the upholstery fabric samples.

Once information search has been completed, the buyer must evaluate competing alternatives and arrive at a purchase intention. Alternative evaluation begins with **evaluative criteria**. These are the criteria and standards used by the consumer to evaluate products or brands. In this study the consumers' evaluative criteria were explored through a free-elicitation task. Consumer education can play a role in this stage by modifying consumers' existing evaluative criteria (Engel and Blackwell, 1982). In this study it was expected that CE might lead consumers to consider durability and flame retardance as important evaluative criteria in the purchase of upholstery fabric. If consumers considered these two factors important they may have been more attentive to such information when confronted with it on labels.

In high-involvement decision-making, the consumer next compares the information gained through the search process against these evaluative criteria. The outcome is formation of **beliefs** regarding each alternative in terms of these criteria. Once beliefs have been formed, **attitudes** toward the act of purchasing an alternative will also be formed. If the attitude is favourable it is then followed by formation of a **purchase intention**. The above process is not clear-cut. Intentions and attitudes can be affected by many outside social and environmental influences. These influences, however, were not of primary concern in this study.

Throughout the **search** and **alternative evaluation** stages of decision-making the consumer utilizes and processes information. Initially the consumer is **exposed** to the information but it may not attract the consumers' **attention**. If it does attract attention it is further processed in short-term memory in order to clarify the meaning of its content. This stage is referred to as **comprehension.** If the information is not understandable it will likely not be used by the consumer. Consumer education can enter this stage of decision-making by increasing consumers' understanding, and in turn usage of, available information. Under conditions of high-involvement, incoming information may never move from short-term into long-term memory. To do so, the information must be relevant to the consumer. In this study, mere existence of durability and flame retardance labelling on fabric samples (even if consumers understand the labels) will not ensure use. Durability and flame retardance must be of importance to consumers before they will use such information in a decision.

Once the stimulus is comprehended and given meaning, it is compared against existing evaluative criteria and beliefs which are stored in long term memory. Unless there is compatibility with these beliefs (**acceptance** of the information by the consumer) information processing terminates. If there is compatibility, information processing continues and, depending upon other factors, existing beliefs will either be reinforced or changed, and the message thus is **retained** in long-term memory. In this study it was hoped that the CE treatments would present information that would be both accepted and retained by consumers so that it could be used effectively in decision-making.

Theoretically, use of additional information should lead to more efficient buying behaviour. The phenomenon of information overload, however, must be considered. Engel and Blackwell (1982) suggest that:

> All to often it is naively assumed that consumer welfare will be increased once the consumer has more information. This completely ignores the costs of information acquisition and use and assumes unlimited information capacity on the part of the individual.(Engel and Blackwell, 1982: p 328)

In this study CI treatment 4, which employs the greatest amount of labelling information, was set up to test the concept of information overload. If too much information was provided consumers may actually have made less efficient choices. Alternatively, exposing consumers to CE may actually have increased their capacity for information processing.

Consumers differ in their individual propensity to search for and utilize information. As well, individuals may differ in their response to CE because of an infinite array of demographic, socioeconomic and lifestyle variables. Factors such as these, however, were not the main concern of this study.

B. Method

The design of the study was a pre-test/post-test experiment. Four consumer education (CE) treatments and four consumer information (CI) treatments were developed to give a total of sixteen different strategies (see Table 1). Consumer education and consumer information were the manipulated variables in the experimental design. The four label (CI) treatments were manipulated during the choice exercise, whereas the four CE treatments were manipulated prior to the choice exercise.

Participants were identified and assigned to different strategies. Participants were household decision-making units (DMU), usually the wife or the husband and wife. Following the administration of a pre-test, CE treatments were administered.

Following the CE treatment an in-home appointment was scheduled, during which participants were asked to choose among a variety of upholstery fabric samples in a simulated purchase for reupholstering a designated piece of furniture already in the home.[4] They also provided reasons for their choice, background information about themselves and their families and completed a post-test.

---

[4] Although the question of furniture flammability is much more complex than the flammability of the upholstery fabric only, an experiment involving manipulation of variables with whole pieces of upholstered furniture is almost impossible. The proposed experiment should indicate the effect of flammability **labels**, whether on upholstery fabric or pieces of furniture.

Table 1. Experimental Design: CI and CE Strategies

		Consumer Education Treatments (CE)			
	Label Information (CI)*	1 None	2 Presentation	3 Pamphlet	4 Presentation plus Pamphelt
1	F.c./brand only	Strategy 1	Strategy 2	Strategy 3	Strategy 4
2	F.C./brand plus UFAC labels	Strategy 5	Strategy 6	Strategy 7	Strategy 8
3	F.c./brand plus B S labels	Strategy 9	Strategy 10	Strategy 11	Strategy 12
4	F.c./brand, UFAC labels and wear ratings (CAN2-130.7-M80)	Strategy 13	Strategy 14	Strategy 15	Strategy 16

*abbreviations in this column refer to the following:

F.c. - fibre content
UFAC - UPHOLSTERED FURNITURE ACTION COUNCIL (United States)
B S - British Standard (United Kingdom Upholstered Furniture Safety Regulations 1980)

Subjects

Subjects were solicited for the experiment from cooperating service, church and community groups in the Edmonton and Winnipeg areas. This method of obtaining subjects facilitated the "presentation" CE strategy. Groups were recruited which broadly represented consumers of upholstered furniture. The groups were offered $2 per member participating. In addition, individual participants were offered the opportunity to win sufficient fabric of their choice to reupholster a sofa and/or chair, up to a maximum value of $400. This latter offer not only encouraged participation but also made the "choice" outcome in the experiment more realistic – i.e., consumers were more apt to indicate their **real** choice, rather than what they thought the researcher wanted them to choose, as they believed they had a chance of actually obtaining it.

Initial contact with each group was by telephone and letter, with a follow-up telephone call to determine willingness to cooperate. Each group member received a letter outlining the requirements of participation, and signed a consent form (Appendix A) before beginning participation in the study. It was stressed that participation was voluntary. Thank-you letters were sent to all cooperating groups.

Groups were assigned to CE treatments in a manner designed to obtain approximately the same number of subjects in each, to distribute the CE treatments geographically where possible, and to fit in with the groups' schedules. One member of each household (the group member) was pre-tested prior to any CE treatment. The pre-test information was intended to assess how knowledgeable respondents were about upholstery serviceability and flammability, based on their own purchasing experience and other sources of information. Pre-test results were used to categorize participants into one of three levels according to prior knowledge and experience. The total possible score on the pre-test was 16. Participants scoring 0-6 points were categorized as low, those scoring 7-10 as medium and those scoring 11-16 as high. As well, pre-test results established a baseline for measuring the effects of the various educational treatments.

For CE treatments 2 and 4, which included the group audio-visual presentation, the pre-test was administered immediately before the presentation began. For treatments 1 and 3, which included no presentation, pre-tests were distributed individually or handed out by the researchers to members of a group at one of their group meetings. Addressed postage-paid envelopes were included, when necessary, for return of the pre-test and consent forms.

For CE treatment 3, the brochure was mailed or delivered to the home approximately one week prior to the in-home appointment. For treatment 4 the brochure was given to participants at the time of the audio-visual presentation.

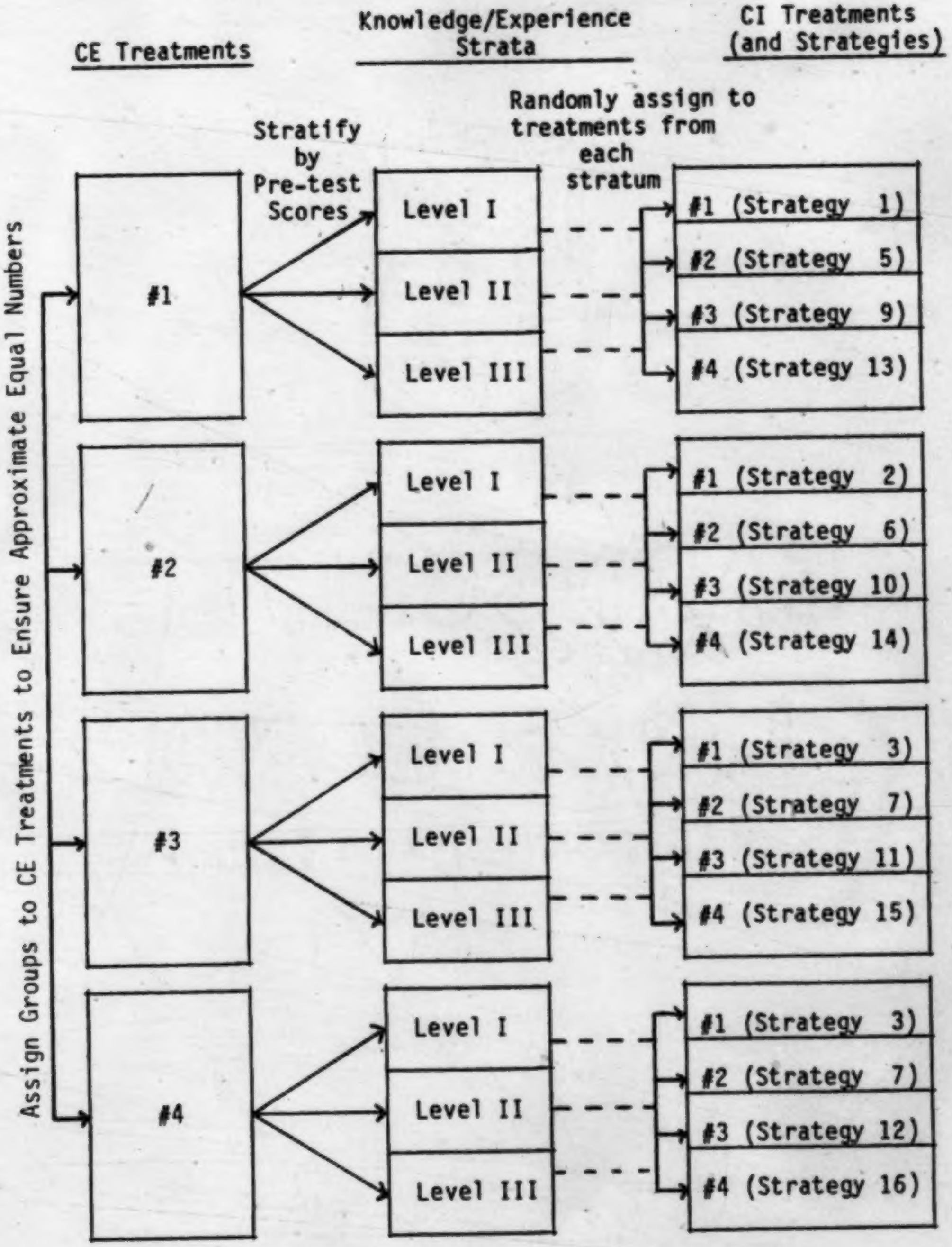
Subjects within each of the three pre-test levels were then randomly assigned in equal numbers to the four CI treatments (see Figure 1). Knowledge/experience differences among subjects assigned to the CE treatments could not be controlled but when differences existed, they were accounted for in subsequent statistical analysis and interpretation.

Consumer Education (CE) Treatments

The consumer education treatments preceded the in-home choice exercise. Consumers in the first (control) treatment received no educational experience. The second treatment (presentation) included an audio-visual sequence on upholstered furniture, emphasizing the flammability issue, followed by group discussion. The audio-visual presentation was prepared by the researcher with professional help, and consisted of two slide-tape modules (of a type which could be easily modified for educational television use). The presentation was scheduled for each group approximately one to two weeks prior to the in-home appointments.

The third treatment consisted of a pamphlet on upholstered furniture. The pamphlet was prepared by the researcher for Alberta Agriculture. Unlike most pamphlets previously available on upholstered furniture, this one contained sections on both flammability and labelling. Consumers in this treatment were mailed the pamphlet approximately ten days prior to their scheduled in-home appointments. This ensured that consumers had adequate time to read the pamphlet in the week preceding the choice exercise.

Figure 1: Assignment of Decision-Making Units (DMUs) to CE/CI Strategies.


CE Treatments
Knowledge/Experience Strata
CI Treatments (and Strategies)
Assign Groups to CE Treatments to Ensure Approximate Equal Numbers
Stratify by Pre-test Scores
Randomly assign to treatments from each stratum
#1
Level I
Level II
Level III
#1 (Strategy 1)
#2 (Strategy 5)
#3 (Strategy 9)
#4 (Strategy 13)
#2
Level I
Level II
Level III
#1 (Strategy 2)
#2 (Strategy 6)
#3 (Strategy 10)
#4 (Strategy 14)
#3
Level I
Level II
Level III
#1 (Strategy 3)
#2 (Strategy 7)
#3 (Strategy 11)
#4 (Strategy 15)
#4
Level I
Level II
Level III
#1 (Strategy 3)
#2 (Strategy 7)
#3 (Strategy 12)
#4 (Strategy 16)

Consumers in the fourth treatment were exposed to the presentation, where they also received the pamphlet, approximately one to two weeks prior to the scheduled appointments.

Consumer Information (CI) Treatments

Consumers in all strategies chose from among the same varieties of upholstery samples. The four treatments varied the amount and type of information included on the upholstery sample labels.

Fabrics for treatment 1 (control) had basic labels like those on most upholstery fabrics and upholstered furniture currently available on the Canadian market, giving only fibre content and brand information (and for some fabrics indication of a stain repellent or soil release finish).

For the second treatment, the basic label was supplemented by modified UFAC hang-tags on those fabrics which would comply with the UFAC voluntary standards. The UFAC labels are part of the U.S.A. upholstered furniture flammability program and they are attatched to upholstered furniture which meets established voluntary standards (Appendix E). The hang-tags used in this study were modified to make them appropriate for upholstery fabrics rather than furniture (i.e., a small label with the phrase "The manufacturer of this upholstery fabric certifies that it is made to reduce, but not necessarily eliminate ignition by a burning cigarette" replaced the first paragraph appearing on the traditional UFAC label).

For treatment 3, the basic label was supplemented with hang-tags which conform to parts III and VI of Schedule 2 of the United Kingdom's Upholstered Furniture (Safety) Regulations 1980 (Appendix E). In the UK, all upholstered furniture must be resistant to ignition by cigarettes and must be labelled (with labels like those used in this study) as to its resistance (or lack thereof) to small flame ignition. Labels used for this study were taken from pamphlets obtained from the British Embassy in Ottawa through CCA's Flammability Hazards Division.

For treatment 4, the modified UFAC hang–tags were used as in treatment 2. In addition, the fabrics had attached a sticky label indicating a performance rating based on National Standard of Canada CAN2–130.7–M80, "Consumer Informative Labelling of Upholstery Fabrics for Furniture." The label stated that the fabric complies with CGSB CAN2–130.7–M80 and had one of the following messages:

a. Suggested Use

LIGHT – This fabric is suitable in a household where it is subject to only occasional use.

b. Suggested Use

MEDIUM – This fabric is suitable in a household where it is subject to more than occasional, but not constant, use.

c. Suggested Use

RIGOROUS – This fabric is suitable for use in a family household where it is subject to normal, constant use.

Product: Upholstery Fabric

Subjects were asked to evaluate and choose among 12 varieties of upholstery fabric representing different levels of durability and resistance to ignition. Each variety represented one style, texture and fibre content. The fabrics were all in the medium price range, had little or no pattern and came in a similar colour range. The 12 fabrics varied as follows:

a. casual, flame retardant (FR), low durability
b. casual, nonFR, low durability
c. casual, FR, medium durability
d. casual, nonFR, medium durability
e. casual, FR, high durability
f. casual, nonFR, high durability
g. formal, FR, low durability
h. formal, nonFR, low durability
i. formal, FR, medium durability
j. formal, nonFR, medium durability
k. formal, FR, high durability
l. formal, nonFR, high durability

Choice Exercise

During the in-home interview a number of sets of data were collected. The data collection instruments are included as Appendices B, C and D. Each of the final instruments was developed after piloting an earlier version with a convenience sample of eight subjects. Minor changes were made after piloting.

The in-home appointments took an average of 40 to 60 minutes. At the end of the appointment, subjects were debriefed. The purpose of the experiment was more fully explained and it was pointed out that some of the labels used in the experiment are not used in Canada. This was necessary to ensure respondents would not be confused in the marketplace. Subjects then signed a form attesting to their participation in the in-home appointments.

Selection and Training of Interviewers

Interviewers with the necessary knowledge and skills to carry out the in-home appointments were selected. They were graduates or senior students of either clothing and textiles or interior design programs.

Group sessions were held to introduce the interviewers to the project, to discuss such concerns as confidentiality and debriefing, and to give initial training in interviewing. In Edmonton, interviewers were then involved in the pilot testing of the instruments. This took place in January 1983 with incomplete sample books. Piloting was carried out in pairs, with each interviewer conducting two and observing two in-home appointments. One of the primary researchers was present at each training session. In Winnipeg, training took place in a home environment after the completed fabric books and instruments were received. Each interviewer conducted one and watched two or three interviews. These training sessions helped to ensure that the same approach was taken by all the interviewers. All interviewers were given the same set of written instructions (Appendix F).

Demographic, Socioeconomic and Lifestyle Variables

Two brief self-administered questionnaires were completed by one member of each DMU during the in-home appointment, in order to measure demographic, socioeconomic and lifestyle variables. Though these variables were measured during the experiment, they were not discussed in this thesis except to assess differences among the four CE groups.

Dependent Measures

Five dependent variables were measured, two cognitive and three choice-related.

Cognitive: A post-test identical to the pre-test was administered during the in-home appointment in order to measure **knowledge gain** (post-test scores minus pre-test scores). Prior to the choice exercise, the DMUs were asked what characteristics they would consider in their choice of upholstered furniture. This free-elicitation task helped establish rapport and subject involvement with the experiment, and the social interaction within the DMU (where applicable) may have stimulated recall of more dimensions. Verbal responses were recorded and grouped by the researcher so that the **number of salient dimensions** considered by the DMU could be determined (question 3, Appendix C). In addition, the number of dimensions referred to during the choice exercise was recorded (question 4, Appendix C), and used as the number of **important** dimensions.

Choice: The fabric choice of each DMU was recorded. The DMUs were asked to complete a **purchase probability scale**, estimating the likelihood that they would buy each fabric variety in an actual purchase situation. This was a measure of intention to buy. In addition, two measures of **choice efficiency** were determined by the researcher using objective flammability and durability criteria.

Data Analysis

Frequency distributions were prepared and/or means and standard deviations calculated for all variables. Frequencies were calculated in both absolute and percentage terms. Where appropriate, dependent variables were broken down by, and/or cross-tabulated with demographic and socioeconomic variables using the "ANOVA" and "CROSSTABS" programs of SPSS.

In order to test the hypotheses, statistical analysis was carried out as shown in Table 2. A decision rule of $\underline{p \leq} 0.05$ was used. Where the nature of the data obtained allowed, analysis of covariance was used to determine the intervening effects of demographic and socioeconomic variables on dependent variables.

Table 2. Summary of Statistical Analysis

Null Hypothesis	Independent Variables	Dependent Variable	Statistical Analysis
1	Consumer Education and Consumer Information (nominal)	a. Knowledge gain (interval)	ANOVA (two-way)
		b. Number of salient/important dimensions (interval)	ANOVA (two-way)
		c. Likelihood to buy (interval)	ANOVA (two-way)
2	Consumer Education and Consumer Information (nominal)	a. Fabric chosen (nominal)	Chi-square
		b. Choice efficiency (nominal)	Chi-square

IV. FINDINGS

This chapter includes a profile of the subjects and descriptive and statistical analysis of the variables and hypotheses.

A. Profile of the Subjects

A total of 448 households participated in the experiment, 214 from Edmonton and 234 from Winnipeg. The majority of households had the wife alone as the decision-making unit (DMU) involved in the experiment. Approximately 10 percent of the cases had two participants, usually the wife and husband. In the tables which follow, respondent 1 represents the primary participant involved in the experimental selection of upholstery fabric. Respondent 2 (where applicable) represents another participant who assisted in the simulated purchase.

Tables 3, 4 and 5 outline a demographic and socioeconomic profile of the subjects. Almost all of the primary respondents were female while the majority of secondary respondents were male. Wide distribution was found among participants over both education and income groups. There was also a wide range in both age and years of schooling.

The average age for the primary respondents was 41 years and for the secondary respondents it was 38.6 years. Full-time homemaker was the occupation of just over half of the primary respondents. About 40 percent were employed, falling largely into four occupational categories: employed professionals; semi-professionals; skilled clerical, sales and service; and semi-skilled clerical, sales and service. Secondary respondents were generally employed full-time as professionals or skilled craft or tradespeople. The mean years of schooling for primary respondents was 13.9 years and for secondary respondents it was 14.5 years. The modal response for level of education reached for both primary and secondary respondents was some type of vocational/technical diploma or incomplete university.

Table 3. Frequency and Percentage Distribution of Participant Type During the Choice Exercise and Total Income for the 448 Households Participating.

Variable	Frequency	Percent
Participant Type		
Couple (wife/husband)	41	9.2
Wife Alone	355	79.2
Single Female	47	10.5
Other	5	1.0
Total Household Income		
Unknown	52	11.6
Under $10,000	16	3.6
$10,000 - 15,999	26	5.8
$16,000 - 21,999	39	8.7
$22,000 - 27,999	50	11.2
$28,000 - 33,999	79	17.6
$34,000 - 39,999	58	12.9
$40,000 - 49,999	52	11.5
$50,000 - 59,999	30	6.7
$60,000 - 69,999	21	4.7
Over $70,000	21	4.7

Table 4. Frequency and Percentage Distribution of Respondents' Sex, Employment Status, Occupation and Education.

Variable	Respondent 1 (n=448)		Respondent 2 (n=44)	
	Frequency	Percent	Frequency	Percent
Sex				
Female	447	99.8	3	6.8
Male	1	0.2	41	93.2
Employment Status				
Full-time	56	12.5	31	70.5
Part-time	88	19.6	0	0.0
Unemployed	10	2.2	3	6.8
Retired	40	8.9	5	11.4
In school	5	1.1	1	2.3
Keeping house	234	52.2	2	4.5
Other	15	3.3	2	2.5
Occupation				
Self-employed professional	3	0.7	1	2.4
Employed professional	17	3.8	7	16.6
High-level management	1	0.2	1	2.4
Semi-professional	36	8.1	4	9.5
Technicians	6	1.3	2	4.8
Middle management	6	1.3	3	7.1
Supervisors	1	0.2	2	4.8
Foremen	0	0.0	1	2.4
Skilled clerical sales, service	39	8.7	3	7.1
Skilled craft, trade	3	0.7	8	19.0
Farmer	1	0.2	0	0.0
Semi-skilled clerical	28	6.3	1	2.4
Semi-skilled manual	2	0.4	1	2.4
Unskilled clerical	8	1.8	0	0.0
Unskilled manual	3	0.7	0	0.0
Homemaker	240	53.7	1	2.4
Retired	40	8.9	4	9.5
Student	4	0.9	3	7.1
Not Applicable	9	2.0	405	-

continued . . .

Table 4 continued

Variable	Respondent 1 (n=448) Frequency	Respondent 1 (n=448) Percent	Respondent 2 (n=44) Frequency	Respondent 2 (n=44) Percent
Education				
Some elementary or complete	3	0.7	1	2.3
Some jr. high or complete	9	2.0	1	2.3
Incomplete sr. high	31	7.0	2	4.5
Complete sr. high	117	26.5	9	20.5
Diploma or some university	170	38.5	14	31.8
Bachelors degree	96	21.7	12	27.3
Advanced or medical degree	16	3.6	4	9.1

Table 5. Mean Age and Years of Schooling for the 448 Households Participating

Variable	Mean	Range	Standard Deviation
Age:			
Respondent 1	41.0	19-82	15.1
Respondent 2	38.6	14-74	15.7
Years of Schooling			
Respondent 1	13.9	6-22	2.5
Respondent 2	14.5	6-22	2.8

Table 6 shows the distribution of the subjects among the various CE/CI strategies. The subjects were uniformly distributed among CE treatments except for the control group which had a higher than average number of subjects. The subjects were balanced according to CI treatments.

Since subjects were not randomly assigned to CE treatments, analyses were done to determine differences that may have existed among CE treatments regarding various demographic, socioeconomic and other related variables. Tables 7 and 8 summarize the results of these analyses. Significant differences were found among CE treatments regarding both employment status and occupation. CE treatment 1 (control group) had a higher concentration of full-time workers employed as professionals or semi-professionals while CE 3 (pamphlet) had a higher concentration of non-working retired persons. CE 4 included more who worked part-time and CE 2 included a larger percentage of homemakers. Significant differences were also found among CE treatments regarding age and both pre-test scores. There was a higher concentration of older subjects in CE 3 and younger subjects in CE 4. For both pre-tests, subjects in CE 2 and CE 4 scored lower than subjects in CE 1 and CE 3.

B. Descriptive Analysis of the Variables

Knowledge gain was calculated by subtracting pre-test score from post-test score. Table 9 shows the respondents' mean scores on both pre-test and post-test. Table 10 shows the change in knowledge on both flammability and serviceability. For the majority of subjects there was some increase in knowledge.

Table 11 shows the frequency distribution for salient and important product attributes in choice of upholstery fabric. The term salient refers to those attributes mentioned by subjects during the free-elicitation task before the choice exercise. The term important refers to those attributes mentioned by subjects during the choice exercise. Of the **salient** dimensions, durability was the one most frequently mentioned followed by ease of care. Colour and aesthetics ranked third and fourth respectively. Flame retardance was mentioned by 16 percent of the primary respondents. Fibre content was mentioned least often.

Table 6. Distribution of Participating Households by CE/CI Strategy.

CI Treatment	CE Treatment 1 Control	 2 Presentations	 3 Pamphlet	 4 Presentation and Pamphlet	TOTAL
1 Control	33	25	28	29	115
2 UFAC* labels	31	27	27	25	110
3 B S ** labels	33	24	27	27	111
4 UFAC labels and wear ratings	35	26	28	23	112
TOTAL	132	102	110	104	448[a]

[a] Edmonton - 214 of total respondents
Winnipeg - 234 of total respondents

* UFAC - UPHOLSTERED FURNITURE ACTION COUNCIL (United States)

**B S - British Standard (United Kingdom Upholstered Furniture Safety Regulations 1980)

Table 7. Chi-Square Analysis of Association of Respondents' Education, Employment Status, Occupation and Income with CE Treatment.

Variable	Chi-Square	d.f.	Significance
Education	4.81	6	0.568
Employment Status	27.47*	9	0.001
Occupation	43.14*	15	0.000
Income	23.16	30	0.809

*Significant at the 0.05 level

Table 8. One-Way Analysis of Variance of Differences Among CE Treatments in Schooling, Age, Pre-Test Scores and Experience.

Variable	F	d.f.	Probability of F
Years of Schooling	0.727	3	0.536
Age	16.758*	3	0.000
Pre-test Flammability	2.926*	3	0.034
Pre-test Serviceability	2.941*	3	0.033
Experience Score	0.177	3	0.912

*Significant at the 0.05 level

Table 9. Respondents' Mean Scores on Pre-Test, Post-Test and Upholstered Furniture Purchase Experience.

Variable	Mean	Range	Standard Deviation
Pre-test:			
Flammability	1.4	0-5	1.1
Serviceability	1.5	0-5	1.2
Post-test:			
Flammability	2.6	0-5	1.3
Serviceability	2.6	0-5	1.4
Experience	2.9	0-6	1.6

Table 10. Respondents' Change in Knowledge of Upholstered Furniture Flammability and Serviceability as Calculated by Post-Test Minus Pre-Test Scores.

Change	Knowledge Gain Flammability (Frequency)	Knowledge Gain Serviceability (Frequency)
-4	0	1
-3	2	0
-2	11	11
-1	38	53
0	113	98
1	106	120
2	95	89
3	57	49
4	23	23
5	1	3

Table 11. Salience and Importance of Product Attributes in Choice of Upholstery Fabric

Attribute	Number (and percent) of Respondents Mentioning Attribute							
	Respondent 1				Respondent 2			
	Salience	Rank accdg to frequency	Importance	Rank accdg to frequency	Salience	Rank accdg to frequency	Importance	Rank accdg to frequency
Durability	374 (84)	1	272 (61)	1	15 (38)	1	23 (52)	2
Ease of Care	209 (47)	2	106 (24)	8	11 (28)	2	7 (16)	8
Colour	160 (36)	3	210 (47)	5	10 (25)	3	19 (42)	3
Aesthetics	157 (35)	4	250 (56)	3	9 (23)	4	27 (61)	1
Miscellaneous	120 (27)	5	136 (30)	7	6 (15)	5	13 (30)	6
Fabric Construction	112 (25)	6	261 (58)	2	1 (3)	7	18 (41)	4
Flame Retardance	73 (16)	7	57 (13)	9	1 (3)	7	3 (7)	9
Tactile	47 (11)	8	148 (33)	6	4 (10)	6	15 (34)	5
Fibre Content	41 (9)	9	222 (50)	4	1 (3)	7	12 (27)	7

The pattern of response for the secondary respondents was similar. Durability was again the most frequently mentioned salient attribute followed by ease of care, colour and aesthetics. Flame retardance, fibre content and fabric construction were all least salient with only one of the secondary respondents mentioning each.

For **important** dimensions durability remained the most frequently mentioned attribute by primary respondents but the percentage of respondents mentioning it dropped. Flame retardance also dropped in frequency of mention. While these two attributes decreased in frequency of mention for primary respondents, the three aesthetic-oriented attributes (colour, aesthetics and tactile properties) increased in frequency of mention. For secondary respondents, as for primary respondents, the aesthetic-oriented attributes increased in frequency of mention as important. However, unlike for primary respondents, both durability and flame retardance increased in frequency of mention for secondary respondents. Fibre content also increased in frequency of mention as an important attribute for secondary respondents.

In general, the physical attributes – colour, aesthetics, tactile properties, fibre content and fabric construction – all increased in frequency of mention when respondents were faced with an actual choice situation. At the same time, durability and flame retardance decreased in frequency of mention for the primary respondents. These same two attributes increased for the second respondents but were still less important than for the primary respondents. The second respondent tended to mention fewer attributes than the primary respondent.

The total number of salient and important dimensions increased when two respondents participated (Table 12). The mean for the number of **salient** dimensions mentioned when there was one respondent was 2.9. When two respondents participated the mean was 3.4. The mean for the number of **important** dimensions was 3.7 for one respondent and 5.2 for two respondents. It is important to note that the figures for two respondents represent the total number of *different* dimensions mentioned by the two respondents (if both mentioned colour it was only counted once). Two persons together considered more attributes than did one person alone, especially in the actual choice exercise.

Table 12. Total Number of Salient and Important Dimensions Mentioned by Respondents Before and During the Choice Exercise.

	Mean	Range	STD Deviation
One Respondent (n=448)			
No. of Salient Dimensions	2.89	1-7	1.19
No. of Important Dimensions	3.71	0-9	2.03
Two Respondents (n=41)			
No. of Salient Dimensions	3.42	1-7	1.18
No. of Important Dimensions	5.17	1-9	1.72

Table 13 summarizes the frequency of selection and likelihood-to-buy each of the twelve upholstery fabrics. The fabrics are also ranked in order for each measure. Fabric 5, Mirage, a flame retardant, high durability fabric was the most frequently selected fabric. The most infrequently selected fabric was 3, Harris, a flame retardant, medium durability nylon tweed.

Ranking of the fabrics changed slightly when likelihood-to-buy ratings rather than fabric chosen, were measured. Consumers on the whole rated fabric 10, Splendor, a non-flame retardant medium durability velvet most highly, followed by Mirage and Centaur. Consumers were least likely to buy fabric 8, a non-flame retardant, low durability flocked fabric.

The end-use conditions respondents were considering when selecting fabric are represented in Table 14. The majority of respondents were selecting a fabric to recover a piece of upholstered furniture that would be used in the living room where it would receive constant usage.

Table 15 shows the appropriateness of the chosen fabric for the specified end use as measured by three variables: flame retardant or not; durability rating; and suitability for intended use. Of the respondents, 56 percent chose a fabric that was flame retardant and 50 percent chose a high durability fabric. Over two thirds of the respondents chose a fabric that was either adequate or more that adequate, in terms of durability, for their intended use.

Table 16 examines the reasons given by the respondents for choosing the fabric they did. The most common response given as the first reason for choosing the fabric was durability, followed closely by aesthetics. One percent of the respondents named flame retardance as their primary reason for selecting the fabric. Durability was also the most common response given as the second reason for choosing the fabric, again followed by aesthetics. When there was a third reason given, durability and aesthetics were equally common responses. Flame retardance remained the most infrequently mentioned response for both reasons 2 and 3.

Table 13. Upholstery Fabrics: Respondents' Frequency of Selection and Likelihood to Buy Each Fabric.

Fabric	Description	Frequency of Selection	Rank	Likelihood to Buy (Possible Range: 1-10) Mean	STD Dev.	Rank
A. Donegal	FR; low durability (100% nylon tweed)	47	4	4.37	3.26	8
B. Homespun	Non FR; low durability (olefin/cotton tweed)	14	10	3.42	2.67	10
C. Harris	FR; medium durability (100% nylon tweed)	12	12	3.11	2.46	11
D. Corduroy	Non FR; medium durability (100% cotton corduroy)	22	8	4.87	2.68	5
E. Mirage	FR; high durability (nylon and and modacrylic blend)	79	1	5.83	2.87	2
F. Tempo	Non FR; high durability (acrylic/cotton pile fabric)	41	5	4.78	2.88	6
G. Slub	FR; low durability (100% polyester slub fabric)	28	7	3.74	2.88	9
H. Flock	Non FR; low durability (flocked fabric; nylon pile; polyester/cotton background fabric)	14	10	2.94	2.62	12
I. Velvet	FR; medium durability (100% polyester velvet)	18	9	4.64	2.82	7
J. Splendor	Non FR; medium durability (acrylic/rayon/cotton textured velvet)	67	2	6.09	2.80	1
K. New Direction	FR; high durability (100% nylon velvet; knit construction)	64	3	5.59	3.03	4
L. Centaur	Non FR; high durability (acrylic/cotton velvet)	41	5	5.65	2.84	3

Table 14. Respondents' Intended Use Conditions for Fabric Selected During the Choice Exercise.

Use Conditions	Frequency	Percentage
Room:		
Living Room	297	66.3
Family Room	53	11.8
Basement/Recreation	61	13.6
Den	9	2.0
Other	28	6.3
Intended Use:		
Occasional	61	13.6
Medium	131	29.2
Constant	256	57.1

Table 15. Appropriateness for Intended Use of Fabric Selected During the Choice Exercise.

Criteria for Appropriateness	Frequency	Percentage
Flame Retardant or Not:		
Yes	250	55.9
No	197	44.1
Durability Rating:		
Low	103	23.0
Medium	121	27.1
High	223	49.9
Suitability for Intended Use:		
Less than Adequate	141	31.5
Adequate	203	45.4
More than Needed	103	23.1

Table 16. Reasons Given for Choosing Fabric Selected During the Choice Exercise

Attribute	Number (and percent) of Respondents Mentioning Attribute							
	1st Reason	Rank accdg to frequency	2nd Reason	Rank accdg to frequency	3rd Reason	Rank accdg to frequency	4th Reason	Rank accdg to frequency
Durability	111 (25)	1	84 (19)	1	58 (13)	3	253 (56)	1
Aesthetics	94 (21)	2	69 (15)	2	59 (13)	2	222 (50)	2
Fabric Construction	61 (14)	3	43 (10)	4	36 (8)	5	140 (31)	5
Tactile	58 (13)	4	47 (11)	3	24 (5)	9	129 (29)	6
Colour	39 (9)	5	69 (15)	2	42 (9)	4	150 (33)	4
Fibre Content	33 (7)	6	32 (7)	6	21 (5)	8	86 (19)	8
Miscellaneous	33 (7)	6	29 (7)	8	28 (6)	7	90 (20)	7
Ease of Care	12 (3)	7	35 (8)	5	29 (7)	6	76 (17)	9
Flame Retardance	6 (1)	8	19 (2)	9	12 (3)	10	28 (6)	10
No Response	1 -	9	30 (7)	7	139 (31)	1	170 (38)	3

C. Testing of the Null Hypotheses

Consumer Education/Consumer Information and Knowledge Gain

Null Hypothesis 1a:

> Subjects exposed to different CE/CI treatments will not differ significantly in knowledge gain regarding serviceability and flammability of upholstered furniture.

Two-way analyses of covariance were used to determine if significant differences in knowledge gain existed among consumers exposed to the various CE/CI strategies.

As mentioned earlier in Chapter 4, analyses were done to examine differences between the four CE treatments on variables such as age and pre-test scores. Significant differences were found. As well, a negative correlation existed between age and knowledge gain meaning younger consumers tended to gain more knowledge. The younger subjects in the sample tended to be in CE groups 2 and 4, the groups that exhibited the significant increases in knowledge gain. Negative correlations also existed between pre-test scores and knowledge gain with CE treatments 2 and 4 having scored lower on both pre-tests. Because of the possibility of both age and low pre-test score rather than CE treatment being responsible for the knowledge gain, age and pre-test scores were used as covariates in the analyses.

Table 17 shows the results of the analyses. The type of consumer information had no significant effect on knowledge gain. The type of consumer education, however, did, even when controlling for age and pre-test scores. Consumers exposed to different consumer education treatments did differ significantly in knowledge gain on both flammability and serviceability. Consumers in CE treatment 2 (presentation) and CE treatment 4 (presentation plus pamphlet) had significantly greater increases in knowledge than did consumers in both CE treatments 1 (control) and 3 (pamphlet). It is also of interest to note the multiple R squared figures. The combination of variables used in these analyses accounted for almost 50 percent of the variance, while initial analyses

Table 17. Analysis of Covariance: The Effect of Consumer Education and Consumer Information on Knowledge Gain.

		Knowledge Gain Flammability	Knowledge Gain Serviceability
CE Effect		F = 54.7 p = 0.00* df = 3	F = 41.7 p = 0.00* df = 3
CI Effect		F = 1.6 p = 0.18 df = 3	F = 1.0 p = 0.42 df = 3
Interaction (CE x CI)		F = 1.2 p = 0.27 df = 9	F = 0.1 p = 1.00 df = 9
Covariates:			
Age (respondent 1)		F = 35.2 p = 0.00* df = 1	F = 3.3 p = 0.07 df = 1
Pre-test (flammability)		F =157.8 p = 0.00* df = 1	
Pre-test (serviceability)			F =187.7 p = 0.00* df = 1
Grand Mean		1.12	1.07
CE Treatment:	Control	0.40	0.22
	Presentation	1.96	1.70
	Pamphlet	0.60	0.89
	Presentation plus Pamphlet	1.72	1.68
Multiple R^2		0.48	0.45

*p $\leq$ 0.001

without covariates accounted for less than one third of the variance.

Null hypothesis 1a is rejected for both measures of knowledge gain (flammability and serviceability) due to the effect of CE rather than the effect of CI. CE was shown to have a significant effect on knowledge gain, CI was not.

Consumer Education/Consumer Information and Number of Salient/Important Dimensions

Null Hypothesis 1b:

> Subjects exposed to different CE/CI treatments will not differ significantly in number of salient and important dimensions considered during the choice exercise.

Two-way analyses of variance were carried out to determine if significant differences existed among the various CE/CI strategies regarding both the number of salient dimensions and the number of important dimensions considered. Analysis with covariates was unnecessary because there were no significant correlations between any of the demographic and socioeconomic variables and the number of salient or important dimensions.

Results of these analyses are exhibited in Table 18. No significant differences were observed between consumers exposed to different CE/CI treatments and number of **salient** dimensions considered. Significant differences on the number of **important** dimensions were observed, however, among consumers exposed to different CE/CI treatments. Consumer information was the variable responsible for the significant differences observed. Consumers in CI treatments 1 (no labels) and 2 (UFAC labels) mentioned significantly more important dimensions than did consumers in CI treatments 3 (British labels) and 4 (UFAC plus durability labels).

Null hypothesis 1b is not rejected for the effect of either CE or CI on number of **salient** dimensions considered but is rejected considering the effect of CI on number of **important** dimensions considered.

Table 18. Two-Way Analysis of Variance: The Effect of Consumer Education and Consumer Information on Number of Salient and Important Dimensions.

		Total Salient Dimensions	Total Important Dimensions
CE Effect		F = 0.47 p = 0.702 df = 3	F = 0.22 p = 0.880 df = 3
CI Effect		F = 0.34 p = 0.798 df = 3	F = 41.74 p = 0.000* df = 3
Interaction (CE x CI)		F = 0.43 p = 0.918 df = 9	F = 1.14 p = 0.332 df = 9
Grand Mean		2.89	3.72
CI Treatment:	Control	2.84	4.54
	UFAC labels	2.92	4.76
	B.S. labels	2.97	2.50
	UFAC plus durability	2.83	3.06
Multiple R^2		0.006	0.222

*$p \leq 0.001$

Consumer Education/Consumer Information and Intention To Buy

Null Hypothesis 1c:

> Subjects exposed to different CE/CI treatments will not differ significantly in intention to buy each type of fabric.

Two-way analysis of variance was used to determine if significant differences in intention to buy each fabric existed among consumers exposed to different CE/CI treatments. In the first set of analyses the fabrics were treated individually. In the second set of analyses the 12 fabrics were grouped (by combining casual and formal fabrics of the same flame retardance (FR) and durability ratings).

Table 19 summarizes the results for this hypothesis and indicates how the fabrics were grouped. Only a few significant differences were observed when the 12 fabrics were analyzed individually. More significant and meaningful results were attained when the fabrics were grouped. Findings discussed below are therefore based on analyses with fabrics grouped.

Consumers in various CE/CI treatments did not differ significantly in intention to buy an FR medium or an FR high durability fabric. They did differ significantly, however, in intention to buy an FR low, nonFR low, nonFR medium, and nonFR high fabric.

CI treatment accounted for the significant difference among various CE/CI strategies in intention to buy a flame retardant, low durability (FR low) fabric. Consumers in CI treatment 4 (UFAC plus durability labels) were significantly less likely to buy an FR low fabric than consumers in the other three CI treatments.

Both CE treatment and CI treatment contributed to the significant difference among various CE/CI strategies in intention to buy a non-flame retardant, low durability (nonFR low) fabric. Consumers in CE treatments 2 and 3 were significantly less likely to buy a nonFR low fabric than consumers in CE treatments 1 and 4. Consumers in CI treatments 3 and 4 were significantly less likely to buy a nonFR low fabric than consumers in CI treatments 1 and 2.

CI treatment alone contributed to the significant difference among various CE/CI strategies in intention to buy a non-flame retardant, medium durability (nonFR medium)

Table 19. Two-Way Analysis of Variance: The Effect of Consumer Education and Consumer Information on Respondents' Likelihood to Buy Each Fabric.

	CE Effect		CI Effect	
Fabrics (not grouped)	F	p	F	p
A	1.061	0.365	1.861	0.135
B	1.934	0.123	2.490	0.060
C	1.118	0.341	0.990	0.397
D	1.252	0.291	2.759	0.042*
E	0.941	0.421	0.270	0.847
F	0.054	0.984	1.637	0.180
G	0.058	0.982	1.883	0.132
H	1.586	0.192	1.898	0.129
I	0.120	0.948	0.077	0.973
J	1.112	0.344	1.954	0.120
K	1.961	0.119	3.679	0.012*
L	2.359	0.071	3.775	0.011*
Casual and Formal Fabrics Grouped				
A/G (FR; low durability)[a]	0.553	0.646	3.685	0.012*
B/H (Non FR; low durability)[a]	3.514	0.015*	3.378	0.018*
C/I (FR; medium durability)	0.851	0.467	0.685	0.561
D/J (Non FR; medium durability)[a]	0.154	0.927	3.757	0.011*
E/K (FR; high durability)	1.428	0.234	1.376	0.249
F/L (Non FR; high durability)[a]	0.899	0.442	4.227	0.006**

a see next page for further analysis
* $p \leq 0.05$
**$p \leq 0.01$

continued . . .

(continued)

Table 19. Two-Way Analysis of Variance: The Effect of CE and CI Treatments on Respondents' Likelihood to Buy Each Fabric.

Treatment Effects	Mean Likelihood to Buy (fabrics grouped)			
	AG FR Low	BH NonFR Low	DJ NonFR Med.	FL NonFR High
Grand Mean	8.11	6.37	10.96	10.43
CE: Control	8.17	6.98	10.76	10.12
Presentation	7.92	5.52	11.10	10.94
Pamphlet	7.83	6.27	11.05	10.18
Presentation + Pamphlet	8.52	6.53	10.98	10.59
Multiple R^2	0.028	0.045	0.026	0.033
CI: Control	8.29	6.93	11.66	10.59
UFAC	8.51	6.84	10.93	10.07
British	8.61	5.82	9.89	9.53
UFAC + Durability	7.03	5.88	11.33	11.51
Multiple R^2	0.028	0.045	0.026	0.033

fabric. Consumers in CI treatments 2 and 3 were significantly less likely to buy a nonFR medium fabric than consumers in CI treatments 1 and 4.

CI treatment, again, had a significant effect on intention to buy a non-flame retardant high durability (nonFR high) fabric. Consumers in CI treatments 2 and 3 were significantly less likely to buy a nonFR high fabric. Also of interest in this particular analysis was the extent to which consumers in CI treatment 4 were likely to buy this type of fabric. Of all consumers, those in CI treatment 4 were most likely to buy a nonFR high durability fabric.

Subjects in CI treatment 3 (British label) were, generally, somewhat less likely to buy nonFR fabrics, and those in CI treatment 4 (UFAC plus durability labels) were, generally, less likely to buy low durability fabrics and more likely to buy high durability fabrics.

The results for this hypothesis should be considered in light of the multiple R squared values, however, which are low. Thus, although hypothesis 1c is rejected for four of the six fabric groups, the data show that the effects of CI and especially CE treatments on intention to buy are small and not always clear.

Consumer Education/Consumer Information and Fabric Selected

Null Hypothesis 2a:

> For each CE treatment, no significant association exists between exposure to different CI treatments and fabric chosen.

Chi-square analyses were done to test this null hypothesis. The results of these analyses are shown in Table 20. To evaluate any effects of CE treatments, separate analyses are reported for subjects from all CE treatments together and from each CE treatment individually.

Analysis for this null hypothesis had two phases. In the first phase the four CI treatments were not combined and analyses were carried out, a) with fabrics not grouped, and, b) by grouping casual and formal fabrics of the same FR and durability rating. Through this phase of analysis a significant association was found to exist between CI treatment and fabric chosen when the fabrics were grouped (2nd column, Table 20).

Table 20. Chi-Square Analysis of the Association Between Consumer Education and Consumer Information and Fabric Chosen.

CE Treatment	1st Phase of Analysis		2nd Phase of Analysis	
	CI Groups Not Combined		CI Groups Combined; Fabrics Combined	
	Fabrics Not Combined (12 fabrics) (33 d.f.)	Fabrics Combined (6 groups) (15 d.f.)	CI 1, 2 and 4 vs. CI 3 (5 d.f.)	CI 1, 2 and 3 vs. CI 4 (5 d.f.)
All Together	$X^2 = 41.79$ $p = 0.140$	$X^2 = 28.53$ $p = 0.019$*	$X^2 = 8.805$ $p = 0.117$	$X^2 = 17.59$ $p = 0.004$**
Control	$X^2 = 22.68$ $p = 0.911$	$X^2 = 9.71$ $p = 0.837$	$X^2 = 4.54$ $p = 0.475$	$X^2 = 4.50$ $p = 0.479$
Presentation	$X^2 = 29.99$ $p = 0.466$	$X^2 = 19.41$ $p = 0.196$	$X^2 = 5.44$ $p = 0.364$	$X^2 = 13.22$ $p = 0.021$*
Pamphlet	$X^2 = 23.01$ $p = 0.903$	$X^2 = 8.19$ $p = 0.916$	$X^2 = 1.11$ $p = 0.954$	$X^2 = 4.97$ $p = 0.419$
Presentation Plus Pamphlet	$X^2 = 30.37$ $p = 0.447$	$X^2 = 21.87$ $p = 0.111$	$X^2 = 5.57$ $p = 0.350$	$X^2 = 10.81$ $p = 0.055$

*$p < .05$
**$p < .01$

Consumers in CI treatment 4 (UFAC plus durability labels) were significantly more likely to choose high durability fabrics than consumers in the other three treatments.

The second phase of analysis was carried out with CI groups combined in two different ways and with fabrics grouped. The significant association found in the first phase of analysis became even more evident when the three CI treatments without durability labels (CI 1,2,3) were grouped together and tested against CI treatment 4 (4th column, Table 20). This significant effect was noted for the combination of all CE treatments and also for CE treatment 2 alone. CE treatment 4 showed a trend toward this effect. For CE treatments 1 and 3, however, the association between CI and fabric chosen did not hold.

CI treatments 1, 2 and 4 were tested against CI treatment 3 to establish if there were any significant effects from the British flammability label on fabric chosen (3rd column, Table 20). No significant effects were noted.

When all CE groups are considered together, null hypothesis 2a is rejected, both when CI groups are not combined and when CI treatments 1, 2 and 3 are tested against CI treatment 4. It is not rejected, however, when CI treatments 1, 2 and 4 are tested against CI treatment 3. Therefore, the significant effect of CI is related to the durability labels rather than the flammability labels. Because the analysis of CI treatment 1, 2 and 3 against CI treatment 4 yielded a significant association for subjects in CE treatment 2 but not for CE treatments 1, 3 and 4, some effect from CE is evident.

Consumer Education/Consumer Information and Choice Efficiency

Null Hypothesis 2b:

> For each CE treatment, no significant association exists between exposure to different CI treatments and choice efficiency.

Chi-square analyses were done to test this null hypothesis. The variable choice efficiency had two measures: selection of a flame retardant fabric or not and selection of a fabric suitable for intended use. Results of these analyses are presented in Table 21. The effect of CE was determined by carrying out separate analyses for each CE treatment.

Table 21. Chi-Square Analysis of the Association Between Consumer Education and Consumer Information and Appropriateness of Chosen Fabric For Intended Use.

CE Treatment	FR or Not		Suitability for Use	
	CI Not Grouped (3 d.f.)	CI 1, 2 and 4 vs. CI 3 (1 d.f.)	CI Not Grouped (6 d.f.)	CI 1, 2 and 3 vs. CI 4 (2 d.f.)
All Together	$\chi^2 = 5.65$ $p = 0.130$	$\chi^2 = 4.31$ $p = 0.038^*$	$\chi^2 = 29.42$ $p = 0.000^{***}$	$\chi^2 = 27.93$ $p = 0.000^{***}$
Control	$\chi^2 = 2.41$ $p = 0.493$	$\chi^2 = 1.14$ $p = 0.285$	$\chi^2 = 7.36$ $p = 0.289$	$\chi^2 = 6.92$ $p = 0.032^*$
Presentation	$\chi^2 = 1.38$ $p = 0.710$	$\chi^2 = 0.39$ $p = 0.535$	$\chi^2 = 16.89$ $p = 0.010^{**}$	$\chi^2 = 14.21$ $p = 0.001^{***}$
Pamphlet	$\chi^2 = 0.19$ $p = 0.978$	$\chi^2 = 0.01$ $p = 0.907$	$\chi^2 = 5.57$ $p = 0.473$	$\chi^2 = 2.42$ $p = 0.298$
Presentation Plus Pamphlet	$\chi^2 = 4.02$ $p = 0.259$	$\chi^2 = 2.77$ $p = 0.096$	$\chi^2 = 11.99$ $p = 0.062$	$\chi^2 = 8.35$ $p = 0.015^*$

$^*p < .05$
$^{**}p \le .01$
$^{***}p \le .001$

No significant association was found to exist between CI treatment and selection of a flame retardant fabric when the CI treatments were considered individually. This finding remained unchanged when controlling for CE treatment (1st column, Table 21). Perusal of the crosstabulations, however, suggested a tendency of the British label to influence selection of an FR fabric. Further analyses were carried out to establish if this apparent tendency was in any way significant and meaningful.

When CI treatments 1, 2 and 4 were grouped together and tested against CI treatment 3 (British label) a significant association was detected considering all CE groups together (2nd column, Table 21). This cross-tabulation showed that for CI treatment 3, 65 percent of subjects chose an FR fabric compared to 53 percent for all other CI treatments combined. By combining the fabrics and CI treatments in this way a significant effect of the British label was detected. Subjects in CI treatment 3 tended to be more apt to choose a flame retardant fabric than consumers in the other three CI treatments combined.

A significant association was found to exist between CI treatment and selection of a suitable fabric. Even when CI treatments were not combined, the effect of CI on suitability for intended use was significant for all CE treatments together as well as for CE treatments 2 and 4 individually (3rd column, Table 21). This association became even stronger when CI treatments 1, 2 and 3 were grouped together and tested against CI treatment 4 (4th column, Table 21). When the CI treatments were grouped in this way a significant association was detected even for consumers in CE treatment 1 (control group). In all three cases (CE 1, 2 and 4), subjects in CI treatment 4 (UFAC plus durability labels), selected fabric of appropriate durability for their needs more often than subjects in the other treatments.

When all CE treatments are considered together and when CI treatments are grouped, null hypothesis 2b is rejected regarding the association between CI and choice of FR fabrics. Regarding the association between CI and choice of a fabric suitable for intended use, null hypothesis 2b is rejected for all CE treatments together both when CI treatments are not grouped and when CI treatments 1, 2 and 3 are tested against CI treatment 4. When the CI treatments are not grouped the association holds for CE 2 but not for CE 1, 3 or 4. When CI treatments 1, 2 and 3 are tested against CI treatment 4, the association holds for CE 1, 2 and 4 but not for CE 3. Thus, both CI and CE appear to have an effect on choice of a suitably durable fabric.

D. Analysis of Other Variables of Interest

The variables discussed in this section of Chapter 4 were not directly involved in hypothesis testing but were of interest to the study.

During the choice exercise, interviewers recorded whether the respondents commented on or asked about the special labels, seemed to look at them, or seemed to be unaware of them. Table 22 shows results of analyses of the variable label awareness broken down by CE treatment. The British label elicited more comments or questions than did the other labels, except from consumers in CE treatment 4. More consumers seemed to look at or read the labels in CI treatment 4 without commenting on them. The UFAC label by itself attracted little attention but respondents in CE treatments 2, 3 and 4 were slightly more aware of the UFAC label than were those in the control CE group.

Consumers in CE treatments 3 and 4 received the pamphlet to read as part of their education treatment. Because of the possibility that these participants may not have read the pamphlets given to them, they were asked whether or not they had read it. Table 23 outlines the results. Of the primary respondents, 69 percent reported reading it at least in part, while 31 percent said no or indicated they were unaware of the pamphlet. Respondents in treatment 3, to whom the pamphlet was delivered as the sole educational material, were slightly more likely to read it than respondents in treatment 4, who received it following the slide-tape presentation. A very small number of second respondents reported reading the pamphlet.

It was thought that perhaps in households in which no one smokes, FR fabrics might have been chosen less often. Analysis through cross-tabulations showed that although non-smokers were slightly more apt to choose nonFR fabrics than were smokers, this effect was not significant (Table 24).

Hypothesis 1b analyzed the effect of consumer education and consumer information on the **number** of salient and important dimensions considered, but the

Table 22. Chi-Square Analysis of the Association Between Consumer Education and Consumer Information and Respondents' Label Awareness.

	CE 1: Control			CE 2: Presentation			CE 3: Pamphlet			CE 4: Presentation + Pamphlet			Entire Sample		
	Label Awareness			Label Awareness			Label Awareness			Label Awareness			Label Awareness		
CI Treatment:	comment or ask	look at	unaware	comment or ask	look at	unaware	comment or ask	look at	unaware	comment or ask	look at	unaware	comment or ask	look at	unaware
UFAC	0%	10%	90%	19%	11%	70%	15%	22%	63%	20%	8%	72%	13%	13%	74%
British	39%	6%	55%	46%	8%	46%	22%	11%	67%	33%	11%	56%	35%	9%	56%
UFAC plus Durability	20%	46%	34%	23%	54%	23%	14%	54%	32%	35%	30%	35%	22%	46%	31%
Total	20%	21%	58%	29%	25%	47%	17%	29%	54%	29%	16%	55%	23%	23%	54%
n	99			77			82			75			333		
Chi-Square	36.65			23.65			13.48			8.56			72.96		
d.f.	4			4			4			4			4		
Significance	0.000			0.0001			0.0092			0.0730			0.000		

Table 23. Frequency and Percentage Distribution of Pamphlet Recipients Reporting Having Read Pamphlet.

CE Treatment	Response	Respondent 1		Respondent 2	
		Frequency	Percentage	Frequency	Percentage
3 and 4 together	Yes	75	36	3	14
	Partly	68	33	2	10
	No/Unaware	66	31	16	76
		210		21	
3 only (pamphlet)	Yes	42	39		
	Partly	38	35		
	No/Unaware	28	26		
		108			
4 only (presentation plus pamphlet)	Yes	33	33		
	Partly	30	30		
	No/Unaware	38	38		
		101			

Table 24. Chi-Square Analysis of Association Between Smoking and Selection of a Flame Retardant Fabric.

	Members of Household Smoke			
	No		Yes	
	Frequency	Percentage	Frequency	Percentage
Selection of an FR Fabric:				
Yes	158	53.7	92	60.5
No	136	46.3	60	39.5
		100%		100%

Chi-square test of significance:
X^2 = 1.87
p = 0.171
d.f. = 1

number alone is not all that is of interest. The effect of various CE/CI strategies on the salience and importance of **specific attributes** is also worth noting (Tables 25 and 26).

Cross-tabulations between CE and the salience and importance of each attribute indicated only one significant association: subjects in CE treatments 2, 3 and 4 were less likely to mention aesthetics in the free-elicitation task than were subjects in the control treatment (1) (Table 25).

Consumer information treatments were not expected to have any effect on the number of **salient** dimensions because consumers had not yet been exposed to the various labels when the number of salient dimensions was measured. During the choice exercise, however, when subjects were exposed to the various types of labels, those in CI treatments 3 and 4 mentioned significantly fewer attributes. Cross-tabulations between CI and the **importance** of each attribute revealed a significant association between CI and importance of several attributes including flame retardance (Table 26). Subjects in CI treatment 3 (British label) were much more likely to mention flame retardance or flammability than were those in the other treatments. They were also less likely to mention several other attributes (colour, aesthetics). There was no significant association between CI treatment and the importance of durability.

Table 25. Chi-Square Analysis of the Association Between Consumer Education and the Salience of Specific Attributes.

	Frequency and Percentage of Respondents Mentioning Attribute as Salient									
	Attribute									
	Colour		Aesthetics		Durability		FR		Fibre Content	
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
CE Treatment:										
Control	56 (42%)	76 (58%)	58 (44%)	74 (56%)	106 (80%)	26 (20%)	16 (12%)	116 (88%)	15 (11%)	117 (89%)
Presentation	33 (32%)	69 (68%)	40 (39%)	62 (61%)	93 (91%)	9 (9%)	22 (22%)	80 (78%)	8 (8%)	94 (92%)
Pamphlet	36 (33%)	74 (67%)	27 (25%)	83 (75%)	91 (83%)	19 (17%)	15 (14%)	95 (86%)	9 (8%)	101 (92%)
Presentation + Pamphlet	35 (34%)	69 (66%)	32 (31%)	72 (69%)	84 (81%)	20 (19%)	20 (19%)	84 (81%)	9 (9%)	95 (91%)
Chi-square test of significance	$X^2 = 3.71$ $p = 0.295$ d.f.= 3		$X^2 = 11.53$ $p = 0.009$* d.f.= 3		$X^2 = 5.95$ $p = 0.114$ d.f.= 3		$X^2 = 4.99$ $p = 0.172$ d.f.= 3		$X^2 = 1.14$ $p = 0.767$ d.f.= 3	

*$p \leq 0.05$

Table 26. Chi-Square Analysis of the Association Between Consumer Information and the Importance of Specific Attributes.

	Frequency and Percentage of Respondents Mentioning Attribute as Important									
	Attribute									
	Colour		Aesthetics		Durability		FR		Fibre Content	
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
CI Treatment:										
Control	57 (50%)	58 (50%)	87 (76%)	28 (24%)	73 (64%)	42 (36%)	11 (10%)	104 (90%)	81 (70%)	34 (30%)
UFAC	66 (60%)	44 (40%)	85 (77%)	25 (23%)	73 (66%)	37 (34%)	18 (16%)	92 (84%)	69 (63%)	41 (37%)
British	24 (22%)	87 (78%)	20 (18%)	91 (82%)	59 (53%)	52 (47%)	25 (22%)	86 (78%)	42 (38%)	69 (62%)
UFAC + Durability	63 (56%)	49 (44%)	58 (52%)	54 (48%)	67 (60%)	45 (40%)	3 (3%)	109 (97%)	30 (27%)	82 (73%)
Chi-square test of significance	$\chi^2 = 40.32$ p = 0.000* d.f.= 3		$\chi^2 = 103.92$ p = 0.000* d.f.= 3		$\chi^2 = 4.54$ p = 0.209 d.f.= 3		$\chi^2 = 22.12$ p = 0.0001* d.f.= 3		$\chi^2 = 57.02$ p = 0.000* d.f.= 3	

*$p \leq 0.05$

V. DISCUSSION

This chapter will consider the findings outlined in Chapter 4 in relation to the objectives of the study, the literature reviewed and the Engel, Kollat and Blackwell model of a high-involvement decision process which was used as the conceptual framework for this study (Engel and Blackwell, 1982: p 500).

The overall purpose of the study was to design and test strategies for the provision of consumer information and education on textile product safety using the example of upholstered furniture.

A. Design of CE/CI Strategies

The first objective was to design several strategies combining consumer information and consumer education on the topics of upholstered furniture and textile flammability. The four CI (label) treatments that were developed are discussed in detail in Chapter 3. The treatments were intended to simulate labelling environments that could evolve in Canada regarding upholstered furniture flammability. Four CE treatments were also developed. These are discussed in detail in Chapter 3 as well. These treatments represented possible methods of educating consumers regarding textile flammability and of alerting them to the existence of informative labels.

B. Testing of CE/CI Strategies

An experiment was then formulated to achieve the second objective. The experiment was designed to measure the effect of the various strategies on:

1. consumers' awareness and understanding of textile flammability and related issues; and
2. consumers' evaluations of and choice among selected pieces of upholstery fabric which vary on several factors including resistance to ignition.

Several measures of both cognition and choice were thus taken so the effect of CE and CI could be evaluated.

Cognition

Two measures of cognition were taken: knowledge gain and number of salient/important dimensions considered. Label awareness and salience/importance of specific attributes were also treated as indicators of cognition.

Although the effect of CI on knowledge gain was analyzed the researcher did not actually expect any effect. CE was expected to have the greatest effect on knowledge gain, and the findings of the study have borne this out. When testing null hypothesis 1a significant differences were found among CE treatments on knowledge gain (Table 17). The slide-tape presentation (CE treatments 2 and 4) showed the greatest effect on knowledge gain, especially regarding upholstery flammability. The presentation likely introduced unfamiliar but thought-provoking ideas in a stimulating manner. It is difficult to convey flammability information in a pamphlet. As well, people may not even read pamphlets as the findings of this study showed (Table 23); almost one third of the subjects who received pamphlets did not read them. Such lack of attention to pamphlets is a possible reason for their ineffectiveness. The addition of the pamphlet in CE treatment 4 did not add to the knowledge gain brought about by the presentation alone (CE 2). It is interesting to note that the pamphlet (CE 3) was more effective in bringing about knowledge gain regarding serviceability than flammability. This is likely because the pamphlet dealt predominantly with serviceability, while the presentation devoted half the time to discussing flammability.

With respect to number of salient and important dimensions considered, the researcher, again, did not anticipate any effect from CI on the number of salient dimensions considered because when salience was measured the subjects had not yet been exposed to the labelling treatments. An effect from CE on number of both salient and important dimensions as well as an effect from CI on number of important dimensions, however, was expected.

Subjects on the whole mentioned more attributes during the choice exercise than they did prior to it during the free-elicitation task (Table 18). As well, aesthetic attributes increased in frequency of mention during the choice exercise when the subjects were exposed to the various fabrics and labelling treatments. On initial examination these findings would appear to lend partial support to those of Nourse and Anderson (1973) who found that the existence of labels led consumers to change the number of evaluative criteria considered, but not their relative importance. Closer examination, however, revealed that during the choice exercise when subjects were exposed to the various labelling treatments, those in CI treatments 3 and 4 mentioned significantly fewer attributes than those in CI treatments 1 and 2 (Table 18). It appears as though both the British flammability label and the durability rating label reduced the number of important dimensions considered. This may be due to the labels focusing subjects' attention on one or two dimensions possibly to the exclusion of others and if this is the case Miller's (1978) thought that informative labelling can suggest possible salient dimensions for product evaluation is supported. Whatever the reason, these findings do not appear to support those of Nourse and Anderson (1973).

The finding that aesthetic attributes increase in frequency of mention (Table 11) when subjects are faced with actual fabrics and labels also appears in opposition to Nourse and Anderson's (1973) finding that the relative importance of evaluative criteria does not change with the existence of labels. Also in opposition is the finding that subjects exposed to the British label during the choice exercise were significantly more likely to mention FR as an important dimension (Table 26). In this study, however, the increased frequency of mention of aesthetics is likely due more to the visual stimulus provided by the fabrics rather than the CI labels.

According to the EKB 1982 model of consumer behaviour, consumer education has the potential to modify consumers' existing evaluative criteria (salient/important dimensions considered). Findings of this study showed no significant effect from consumer education on number of either salient or important dimensions considered (Table 18). As well, CE did not seem to have an effect on the salience or importance of FR as a product attribute. There was, however, an apparent effect from CE on the relative importance of aesthetics as an attribute with subjects in CE treatments 2, 3 and 4 being less likely to mention aesthetics as a salient dimension (Table 22). These findings differ from those of Crosby and Taylor (1981) who found that consumer education affected the number of attributes considered but not the relative importance of such attributes.

Flame retardance remained one of the least often considered product attributes by both primary and secondary respondents. These results correspond to those of Rucker (1980) who found that furniture flammability was one of the least important concerns to prospective furniture customers. As with Rucker (1980), features such as style, durability and colour were considered most often. It is interesting to note, however, that for second respondents, flame retardance and durability increased in frequency of mention when the respondents were actually looking through the labelled fabrics. Since most of the second respondents were males this finding is similar to the Crosby and Taylor (1981) finding that information influences product performance expectations and preferences of males but not of females. Even though FR and durability increased in frequency of mention for second respondents, though, they were still less important than for primary respondents.

Of the two flammability labels used in the study, subjects were more aware of the British label than the UFAC label (Table 22). Such results likely reflect the visual design and message differences between the labels. The British label uses an uncluttered, well-known visual symbol: the red warning triangle. The message is succinct and has a negative (warning) connotation. The UFAC label, on the other hand, is less compelling visually (it tends to blend with fabrics), and has to be unfolded and a lengthy message read before the purpose of the label can be comprehended. As well, the message has a positive connotation which does not attempt to sway consumers' attitudes toward flame retardance.

Over half of the subjects actually seemed unaware of any of the special labels (Table 22). This seems a high percentage considering that purchase of upholstery fabric is complex and relatively high risk. According to Engel and Blackwell (1982) such a purchase usually involves extended problem solving and there is active search for and use of information by the consumer. In this study the consumers may have felt they had adequate internal information with which to make the choice or perhaps they did not perceive high risk (maybe because it was not a real situation). Alternatively, the lack of awareness may be due to the quality of the information provided, rather than the consumers themselves, as other researchers have found (Sproles et al., 1978, 1980; Anderson, 1977). Engel and Blackwell (1982) suggest that in order for consumers to use information it must be relevant to their needs and concerns. Judging from the low frequency of mention of flame retardance as a salient dimension it is not surprising that consumers were not more attentive to flammability labelling. One further explanation for such lack of awareness may revolve around the fact that awareness is difficult to measure and in this study measurement involved an element of judgement on the part of the interviewer. As such, actual awareness may not have been measured and results must be interpreted with this in mind.

In general, the findings of this study indicate that both CE and CI affect consumers' awareness and understanding of upholstered furniture flammability.

Choice

Three measures of choice were taken: purchase probability rating (likelihood-to-buy); choice of an FR fabric; and choice of a fabric that was of appropriate durability for intended use.

The effects of CE and CI on choice as measured by the likelihood-to-buy ratings were unclear. There was, however, a tendency for the British label (CI 3) to inhibit likelihood to purchase nonFR fabrics (Table 19). The British flammability label appeared to discourage selection of nonFR fabrics while the UFAC label (CI 2 and 4) did not appear to encourage selection of FR fabrics. The effect of the British label was somewhat clearer when selection of an FR fabric was analyzed (Table 21). Subjects in CI treatment 3 were more apt to choose a flame retardant fabric than consumers in the other three CI treatments combined.

The effect of the durability rating labels on choice was clear. Analyses for null hypotheses 2a and 2b revealed significant differences among CI treatments on ability to select a suitable fabric. Subjects in CI treatment 4 (UFAC plus durability labels) selected appropriately durable fabric more often than subjects in the other three treatments (Table 21). These results support the theory that informed consumers should be able to make more intelligent purchase decisions if they are provided with objective factual information on the features of competing products (Sproles et al., 1980). Cox (1967) found that consumers appear more likely to utilize or respond favourably to performance information when performance uncertainty is high. As well, consumers respond to information if it is relevant to their concerns (Anderson, 1977; Sproles et al., 1980; Engel, Blackwell and Kollat, 1978). Durability is both difficult to assess and very important to consumers so perhaps the stressing of such an apparently salient attribute on a label had a positive effect.

Although the durability rating label is effective in terms of selection of an appropriately durable fabric, it unfortunately appears to overshadow the effectiveness of the UFAC label in reducing the likelihood to buy nonFR fabrics. Subjects in CI treatment 4 (UFAC plus durability labels) were much more likely to buy a nonFR high durability fabric than were subjects in the other three treatments (Table 19). The fact that the fabric was rated high in durability was apparently more important than the fact that it was not a flame retardant fabric. The durability rating label may not have had the same effect if combined with the more effective British label but since this labelling combination was not tested it was not possible to assess results of such a combination. However, given the greater importance to consumers of durability over flame retardance, it is likely that durability ratings would have more impact on choice than would any flammability labels.

The findings just mentioned relate to other researchers' work on information overload (Scammon, 1977; Sproles et al., 1980; Engel and Blackwell, 1982). If one considers selection of an FR fabric the sole determinant of choice efficiency then the addition of durability rating information led to dysfunctional performance by the subjects in CI treatment 4 (UFAC plus durability labels). Subjects in CI treatment 4 were more likely to buy a nonFR high durability fabric than subjects in the other three treatments. The durability labels led subjects to choose a high durability fabric even though the fabric was labelled nonFR.

Thus, it was found that CI affects choice regarding both durability and flammability. The affect of CE on choice, however, was more significant regarding durability than flammability. The effectiveness of the durability labels (CI 4) was more obvious for CE treatments 2 and 4, where subjects chose fabrics labelled high durability more often than subjects in CE treatments 1 and 3 (Table 21). This finding is similar to Nourse and Anderson's (1973) finding that influence of labels was greater when buyers were alerted to the existence and contents of the informative labels. The fact that CE had no effect on choice of an FR fabric though, is in keeping with the finding that durability was a more important attribute in choice than was flammability, and information relevant to durability would be more pertinent to the consumer.

It is interesting to note that for subjects in CE treatment 3 (pamphlet) there was no significant association between CI treatment and choice of an appropriately durable fabric, whereas there was for the other CE treatments (Table 21). Such results might be explained by the fact that this CE group was composed of a relatively high proportion of older retired subjects who tended to select fabrics which were more than adequate for their needs (mainly because they more often needed only medium durability fabrics unlike subjects from the other CE groups who had more varied performance requirements).

Half of the fabrics in the experiment were flame retardant (FR). With this in mind, the proportion of subjects choosing FR fabrics was not encouraging. It was thought that perhaps in households in which no one smokes, FR fabrics might have been chosen less often. Such was not the case. Although non-smokers were slightly more apt to choose nonFR fabrics than were smokers, the effect was not significant (Table 24). The low number of subjects choosing FR fabrics cannot be attributed to the fact that non-smokers perceive less need for FR fabrics.

As discussed earlier, CE was found to significantly affect knowledge gain but at the same time, none of the CE treatments appeared to affect the salience or importance of FR. Given this, it is not surprising that CE did not affect choice of an FR fabric. These findings strongly support those of Staelin (1978), who found, regarding safety behaviour, that the aggregate effect of CE on changing actual behaviour over a short time span was miniscule.

Day (1976) suggested that a hierarchy of effects exists in which prior cognitive effects are a necessary condition for subsequent changes in attitude and behaviour. Before actual behaviour is altered, consumers must alter their attitudes towards upholstered furniture flammability and any type of corresponding informative labelling.

Such change may only be achieved through continual exposure to educational programs addressing the information. In this study the consumer education treatments involved only a single exposure - hardly enough to significantly affect attitude and choice. What is important though, is all CE treatments affected knowledge gain, especially the presentation treatments (CE 2 and 4) and as such, repeated exposures should eventually affect attitude and in turn choice.

The findings of this study show that both CE and CI affect choice but the effect of CI is more evident in the short run than is the effect of CE.

VI. SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

A. Summary

The purpose of this study was to design and test strategies for the provision of consumer information (CI) and consumer education (CE) on textile product safety using the example of upholstered furniture. More specifically, effects of different CE/CI strategies on consumers' awareness and understanding of textile flammability as well as their evaluations of and choice among alternative upholstery fabrics were examined. The Engel, Kollat and Blackwell (EKB) model of a high-involvement decision process was the conceptual framework used for this study (Engel and Blackwell, 1982: p 500).

Four different CE treatments and four different CI treatments were developed. These treatments were combined in various ways to form sixteen different CE/CI strategies for the experimental design.

A total of 448 households participated in the experiment, 214 from Edmonton and 234 from Winnipeg. Subjects' knowledge of upholstery fabric serviceability and textile flammability was measured before and after the administration of the different CE and CI treatments. Also measured was their choice behaviour in a simulated purchase experience. Demographic and socioeconomic information about themselves and their families was recorded as well. Descriptive analyses such as frequencies and means were used to describe the sample and the different variables. To test the null hypotheses, two-way analysis of variance, analysis of covariance and chi-square statistics were used. Pearson product moment correlations were done to assess possible correlations between the various demographic and socioeconomic variables and the dependent variables.

Subjects on the whole mentioned durability most frequently during the free-elicitation task. Physical attributes (colour, aesthetics, fibre content, etc.), however, all increased in frequency of mention when respondents were faced with an actual choice situation. Subjects in CE treatments 2, 3 and 4 were less likely to mention aesthetics in the free-elicitation task than were subjects in treatment 1. During the choice exercise, subjects in CI treatments 3 and 4 mentioned significantly fewer attributes. Subjects in CI treatment 3 (British label) were much more likely to mention flame retardance than were those in the other treatments.

The British label elicited more comments or questions than did the other labels, except from consumers in CE treatment 4. More consumers seemed to look at or read the labels in CI treatment 4 without commenting on them. The UFAC label by itself attracted little attention but subjects who received some form of consumer education (CE 2, 3 and 4) were slightly more aware of the UFAC label than were those in the control CE group.

Of the subjects who received the pamphlet as part of their educational treatment, approximately two thirds reported reading it at least in part. Respondents in treatment 3, for whom the pamphlet was the sole educational material, were slightly more apt to read it than respondents in treatment 4, who received it following the slide-tape presentation.

Whether or not members of a household smoked had no significant influence on whether or not an FR fabric was chosen.

Significant differences in knowledge gain were found among subjects exposed to different CE treatments. Even when controlling for age and pre-test scores, subjects in CE treatments 2 and 4 had significantly greater increases in knowledge than did subjects in both CE treatments 1 and 3. Consumer information had no effect on knowledge gain.

A significant difference in the number of **important** dimensions considered was found among CI treatments, with subjects in CI treatments 3 and 4 mentioning significantly fewer important dimensions than subjects in CI treatments 1 and 2. No significant differences in number of **salient** dimensions were found among CI treatments and no significant differences in number of **either** salient or important dimensions were found among CE treatments.

Significant differences among CE/CI treatments were found on intention to buy FR low durability, nonFR low durability, nonFR medium durability and nonFR high durability fabrics. Subjects in CI treatment 3 (British label) were, generally, somewhat less likely to buy nonFR fabrics, and those in CI treatment 4 (UFAC plus durability labels) were, generally, less likely to buy low durability fabrics and more likely to buy high durability fabrics. CI treatment affected intention to buy to a greater extent than did CE treatment.

Significant associations were found between exposure to different CE/CI treatments and fabric chosen. The significant association was related to the effect of the durability labels on fabric chosen rather than to the effect of the flammability labels, however. Subjects in CI treatment 4(UFAC plus durability labels) were significantly more likely to choose high durability fabrics than subjects in the other three CI treatments. For all CE treatments together as well as for CE treatment 2 alone this association between CI and fabric chosen held (Table 20).

Significant associations were found between exposure to different CE/CI treatments and choice efficiency. Considering all CE treatments together, a significant association existed between CI treatment and selection of an FR fabric, with subjects in CI treatment 3 tending to choose FR fabrics more often than subjects in the other three CI treatments combined. Significant associations existed between exposure to both CI treatment and CE treatment and selection of a suitable fabric. For CE treatments 1, 2 and 4, subjects in CI treatment 4 (UFAC plus durability labels), selected suitable fabric more often than subjects in the other CI treatments.

B. Conclusions

The first objective, to design CE and CI strategies regarding upholstery fabric serviceability and textile flammability, was accomplished. Four CE treatments and four CI treatments, all discussed in detail in Chapter 3, were developed.

The second objective was to test the effectiveness of these different strategies in changing consumer knowledge (cognition) and behaviour (choice) with respect to upholstery fabric flammability. This objective was also accomplished.

Results indicated differing effects of the various CE treatments on knowledge gain. The slide-tape presentation showed the greatest effect on knowledge gain. The pamphlet had little effect on knowledge gain, due likely in part to subjects not reading it. The addition of the pamphlet in CI treatment 4 did not add to the knowledge gain brought about by the presentation alone. Thus, it may be concluded that consumer education has the potential to change consumers' knowledge but its effectiveness can depend on its format. A presentation strategy clearly appears more effective than a pamphlet strategy.

It should be noted, however, that effectiveness may also depend on characteristics of the consumer such as capacity for, and interest in learning (as illustrated in the EKB model).

Of the two flammability labels used in the study, subjects were more aware of the British label than the UFAC label. As well, the British label was shown to have the most impact on purchase behaviour regarding FR fabrics. The British label tended to discourage selection of nonFR fabrics whereas UFAC labels did not necessarily act as encouragement to select FR fabrics. These findings suggest that the visual impact and negative connotation of the British label are more compelling and thus more effective in increasing awareness and influencing purchase intentions regarding textile flammability.

Consumer education did not seem to have an effect on the salience or importance of FR as a product attribute. Flame retardance remained one of the least often considered product attributes. This result appears not to support the EKB model which suggests that CE has the potential to modify consumers' existing evaluative criteria. It appears that merely one exposure to consumer education regarding textile flammability is inadequate to alter consumers' existing evaluative criteria and make FR an important product attribute.

Effects from the durability rating label were more apparent than were those from flammability labels. The durability label was shown to be highly useful in terms of selection of an appropriately durable fabric but at the same time the effectiveness of the UFAC label appears to be reduced when accompanied by the durability label. The much higher importance to consumers of durability over flame retardance, however, and others' findings that information affects choice on an important attribute (Nourse and Anderson, 1973), lead to the conclusion that a high durability rating would have more effect on choice than would a flammability label until attitudes change and FR becomes a more important consideration.

Consumer information was shown to have an impact on purchase behaviour. Consumer education, on the other hand, was not. Although CE was found to significantly affect knowledge gain, none of the CE treatments appeared to affect the salience or importance of FR; therefore it is not surprising that they did not yet significantly affect choice of an FR fabric. Findings of Staelin (1978) are strongly supported by the results of this study. A hierarchy of effects (Day, 1976) is likely the reason for such results. Before actual behaviour is altered, consumers must alter their attitudes towards upholstered furniture flammability and any type of corresponding labelling. As such, repeated exposures should eventually affect attitude and in turn choice.

The aforementioned concluding thoughts may be condensed into the following major observations:

1. Consumer education can be effective in bringing about knowledge gain.
2. Even though there is knowledge gain, behaviour change in the short run is limited.
3. Consumer information can be effective in improving choice efficiency, especially if it is relevant to consumer concerns.
4. Of the two types of flammability labels, the British warning labels were more effective than the UFAC labels in eliciting consumer response.
5. The concept of a hierarchy of effects is substantiated by results of this study; attitude change is a prerequisite for behaviour change.

Limitations

This study was limited by the inability to randomize subjects into CE treatments. Although analyses revealed few meaningful effects from extraneous variables on results, biases likely existed.

The fabrics used for the experiment imposed another limitation on the study. Even though the researcher attempted to choose fabrics of similar aesthetic appeal, differences did exist. Such differences likely influenced results to some extent.

The instruments used for data collection could have limited the study to some extent as well. Measurement of variables such as "label awareness" and "purchase intention" may not have been as accurate as desired.

One further limitation may have been interviewer bias. Even though training sessions were conducted and similar instructions were given to each interviewer, differences in attitude and style likely existed and may have affected results.

C. Recommendations

As indicated in the introduction, some form of furniture flammability regulation and labelling is warranted in light of current fire statistics. This study attempted to evaluate consumer response to various CE/CI strategies that could evolve regarding such regulation.

The following recommendations for CE and CI are presented to guide policy decisions regarding an upholstered furniture flammability standard.

Consumer Education

Findings of this study showed that consumer education affects knowledge; however, findings also suggested that because of a hierarchy of effects it takes time for this effect to translate into attitude and behaviour change. Such is likely the case regarding positive evaluation and choice of FR fabrics. Introduction of consumer education as soon as possible, therefore, is an essential prerequisite to future attitude and behaviour change. FR must be considered an important product attribute before consumers will choose it, especially voluntarily. Reinforcement and repetition through consumer education should bring about a gradual change in how consumers evaluate alternatives.

The audio-visual presentation was found to be the more effective CE medium in this study. If the Canadian government decides to implement a consumer education program regarding upholstered furniture flammability it is recommended that funds be directed to the production of audio-visual sequences (television spots, slide-tapes, etc.), and that their use be repeated numerous times over the next few years. This type of program would be very important if a voluntary standard were to be adopted, but it would also complement a mandatory labelling program.

Consumer Information: Labels

The British label was found to be more effective in this study than was the UFAC label. If the Canadian government introduces a flammability labelling program for upholstered furniture, a system similar to the British one is recommended. If a voluntary standard is implemented at least the corresponding labels should be of the British type – a warning label attatched to non-complying furniture. With a voluntary scheme of this nature, however, it may be difficult to get manufacturers to voluntarily attach a negative label to their non-complying furniture.

Durability labels were shown to have a substantial effect on choice of an appropriately durable fabric. Results also showed that durability labels reduced the effectiveness of flammability labels when both were evident on a fabric. As such, if the government implements a durability rating labelling program as well as a flammability labelling program for upholstered furniture, less effect from the flammability labels should be expected, at least until consumer education efforts make FR an important product attribute.

Further Research

Although subjects were fairly representative of the population of interest to this study, significant differences were found among the different CE groups on some of the demographic/socioeconomic variables. These differences affected dependent variables to some extent. As such, replication of this study is recommended, using more random assignment of subjects to CE groups if possible.

Much of the literature reviewed suggested the necessity of consumer education to ensure effectiveness of consumer information (labelling) programs. Results of this study, however, indicated that it is not as clear-cut as this. Replication of the study using another complex product category may provide further insight into the relationship between CE and CI as well as contributing toward theories of consumer behaviour.

Longitudinal research designed to measure the long term effectiveness of consumer education programs, particularly regarding attitude change, though difficult methodologically, could prove extremely rewarding for public policy makers as well as for consumer behaviour theorists. When policy decisions involving large expenditures are contemplated, evidence attesting to the long term effects of both consumer education and consumer information would be extremely meaningful.

Refinement of the instruments could improve the validity of the experiment and the reliability of the results. For example, measurement of the variable "label awareness" needs to be improved to ensure that awareness is indeed measured. Although an attempt was made by the researcher to use fabrics of similar construction and aesthetic appeal, differences did exist – differences that may have affected results.

Results of this study indicated effects from demographic/socioeconomic variables on effectiveness of CE/CI. More extensive analysis of this data might suggest appropriate avenues for further research into the influence of such variables on consumer propensity to respond to CE and utilize CI. Such information would aid in effectively targeting CE/CI efforts.

BIBLIOGRAPHY

Anderson, D. Consumer information-seeking for a durable product. Doctoral Dissertation, School of Business Administration, University of Western Ontario, London, Ontario, 1977.

Andreason, A.R. and Ratchford, B.T. Factors affecting consumers' use of information sources. *Journal of Business Research*, 1976, *4*(3), 197-212.

Arbaugh, J.E. Profiling the textile/apparel consumer: a study of the usage of care label information. Doctoral Dissertation, The Ohio State University, Ohio, 1974. University Microfilms International, Ann Arbor, Michigan.

Beales, H., Mazis, M.B., Salop, S.C., and Staelin, R. Consumer search and public policy. *Journal of Consumer Research*, 1981, *8*(1), 11-12.

Bettman, J.R. and Park, W.C. Effects of prior knowledge and experience and phase of the choice process on consumer decision processes: a protocol analysis. *Journal of Consumer Research*, 1980, *7*(3), 234-248.

Bloom, P.N., Ford, G.T., and Harvey, J.W. An evaluation of televised consumer education: a pilot study. in *Advances in Consumer Research*, William D. Perreault Jr. (ed.), 1977, *4*, 388-391.

Bloom, P.N. and Silver, M.J. Consumer education: marketers take heed. *Harvard Business Review*, January-February 1976, pp.32-34; 36; 40; 42; 149.

Brown, S.A. and Crown, E.M. Consumer attitudes towards product safety and its regulation: the case of textile flammability. *Proceedings of the Annual Conference of the Administrative Sciences Association of Canada, Marketing Division*, University of British Columbia, May 1983, *4*(3), 22-31.

Brown, S.A. and Crown, E.M. Trade-offs among textile product attributes: a conjoint analysis approach. Unpublished research paper, 1983.

Brown, S.W. and Dimsdale Jr., P.B. Consumer information: toward an approach for effective knowledge dissemination. *Journal of Consumer Affairs*, 1973, *7*(1-2), 55-60

Coney, K.A. and Patti, C.H. Advertisers responses for requests for substantiation of product claims: differences by product category, type of claim and advertising medium. *Journal of Consumer Affairs*, 1979, *13*(2), 225-235.

Cox, D.F.,ed. *Risk Taking and Information Handling in Consumer Behavior.* Boston: Division of Research, Graduate School of Business Administration, Harvard University, 1967.

Crosby, L.A. and Taylor, J.R. Effects of consumer information and education on cognition and choice. *Journal of Consumer Research*, 1981, *8*(1), 43-56.

Crown, E.M. and Brown S.A. Flame retardance as a criterion in textile product evaluation: a conjoint analysis approach. *Journal of Consumer Product Flammability*, December 1981a, *8*, 221-234.

Crown, E.M. and Brown, S.A. *Attitudes toward household textile flammability and flammability regulations*, Unpublished research paper presented to Canadian University Teachers of Home Economics Conference, Halifax, May 25-28, 1981b.

Daly, P.A. The response of consumers to nutrition labeling. *Journal of Consumer Affairs*, 1981, *15*(2), 301-316.

Dardis, R. *The Economics Of Consumer Product Information.* Washington D.C.: U.S. Department of Commerce, 1980.

Day, G.S. Assessing the effects of information disclosure requirements. *Journal of Marketing*, 1976, *40*(2), 42-52.

Day, G.S. and Brandt, W.K. Consumer research and the evaluation of information disclosure requirements: the case of truth in lending. *Journal of Consumer Research*, 1974, *1*, 21-42.

Engel, J.F., Blackwell, R.D. and Kollat, D.T. *Consumer Behavior* (3rd edition). Chicago:The Dryden Press, 1978.

Engel, J.F. and Blackwell, R.D. *Consumer Behavior*, (4th edition). Chicago: The Dryden Press, 1982.

Grieve, J.J. The effect of information search on satisfaction of carpet buyers. Unpublished masters thesis, Department of Clothing and Textiles, University of Alberta, Edmonton, Alberta, 1983.

Hartman, L.E. Effectiveness of the Canadian Carpet Institute's classification label as an information source for carpet buyers. Unpublished masters thesis, Department of Clothing and Textiles, University of Alberta, Edmonton, Alberta, 1982.

Hatch, K.L. and Lane, S.E. Care labels: will more information help consumers?. *Home Economics Research Journal*, 1980, *8*(5), 361-368.

Hawkins, C.H. A study of the use of consumer education concepts by high school graduates. *Journal of Consumer Affairs*, 1977, *11*(1), 122-127.

Horne, L. Information sources of purchasers of selected home furnishings textile products. Unpublished masters thesis, Department of Clothing and Textiles, University of Alberta, Edmonton, Alberta, 1980.

Horne, L. and Crown, E.M. The use of information sources in the purchase of home furnishing textile products. Accepted for publication in *Canadian Home Economics Journal*, research section, Fall 1983, *33*(3).

Jacoby, J., Chestnut, R.W. and Silberman, W. Consumer use and comprehension of nutrition information. *Journal of Consumer Research*, 1977, *4*(2), 119-128.

Kincaid, C. and Hatch, K. Do consumers understand care labels?. *Textile Chemist and Colorist*, 1978, *10*(2), 22-25.

Klopp, P. and MacDonald, M. Nutrition labels: an exploratory study of consumer reasons for nonuse. *Journal of Consumer Affairs*, 1981 *15*(2), 301-316.

Langrehr, F.W. Consumer education: does it change students' competencies and attitudes?. *Journal of Consumer Affairs*, 1979, *13*(1), 41-53.

Langrehr, F.W. and Mason, J.B. The development and implementation of the concept of consumer education. *Journal of Consumer Affairs*, 1977, *11*(2), 63-79.

Lenehan, R.J., Thomas, J.A., Taylor, D.A., Call, D.L., and Padberg, D.I. Consumer reaction to nutrition labels on food products. *Journal of Consumer Affairs*, 1973, *7*(1), 1-12.

Malhotra, N.K., Jain, A.K., and Lagakos, S.W. The information overload controversy: an alternative viewpoint. *Journal of Marketing*, 1982, *46*(2), 27-37.

McNeill, D.L. and Wilkie, W.L. Public policy and consumer information: impact of the new energy labels. *Journal of Consumer Research*, 1979, *6*(1), 1-11.

Miller, J.A. *Labeling Research - The State Of The Art*. Cambridge, Massachusetts: Marketing Science Institute, 1978.

Mitchell, A.A.,ed. *The Effect of Information on Consumer and Market Behavior.* Chicago: American Marketing Association, 1978.

Nelson, P. Information and consumer behavior. *Journal of Political Economy*, 1970, *78*, 311-329.

Newman, J.W. and Staelin, R. Information sources of durable goods. *Journal of Advertising Research*, 1973, *13*(2), 19-28.

Nourse, R.E.M. and Anderson, D.C. The effects of informative labeling on a consumer durable purchase. *Proceedings of the American Marketing Association Educators Conference*, 1973, 278-282.

Parasuran A. and Miller, J.C. Advising consumers on safer product use: the information role of the new Consumer Product Safety Commission. *American Marketing Association 1974 Combined Proceedings.* Ronald C. Curham (ed), 1975, 372-376.

Ratchford, B.T. The value of information for selected appliances. *Journal of Market Research*, 1980, *17*(1), 14-25.

Richardson, L. *Consumer Education - A Position On The State Of The Art.* Office of Consumers' Education: Washington D.C., 1977.

Rucker, M.H. Consumer concerns about furniture flammability. *Journal of Consumer Product Flammability*, 1980, *7*(4), 235-249.

Rucker, M.H., McGee, K.M., Gorong, M.L., O'Reilly, L.M. and Damant, Gordon H. Consumer research on furniture flammability. *Journal of Consumer Product Flammability*, 1980, *7*(3), 151-160.

Scammon, D.L. 'Information load' and consumers. *Journal of Consumer Research*, 1977, *4*(3), 148-155.

Sproles, G.B., Geistfeld, L.V. and Badenhop, B. Informational inputs as influences on efficient consumer decision-making. *Journal of Consumer Affairs*, 1978, *2*(1), 88-103.

Sproles, G.B., Geistfeld, L.V. and Badenhop, B. Types and amounts of information used by efficient consumers. *Journal of Consumer Affairs*, 1980, *14*(1), 37-48.

Staelin, R. The effects of consumer education on consumer product safety behavior. *Journal of Consumer Research*, 1978, *5*(1), 30-40.

Thorelli, H.B. Concentration of information power among consumers. *Journal of Marketing Research*, 1971, *8*, 427-432.

Thorelli, H.B. Consumer rights and consumer policy: setting the stage. *Journal of Contemporary Business*, 1978, *7*(4), 3-15.

Thorelli, H.B. and Engeldow, J.L. Information seekers and information systems: a policy perspective. *Journal of Marketing*, 1980, *44*(2), 9-27.

Wall, M. Consumer use of fibre and care information when selecting textile yard goods. *Canadian Home Economics Journal*, 1978, *28*(4), 264-273.

Wilkie, W.L. *How Consumers Use Product Information*. Washington, D.C.: U.S. Government Printing Office, 1975.

APPENDICES

APPENDIX A

(Covering Letter/Consent Form)

FACULTY OF HOME ECONOMICS
THE UNIVERSITY OF ALBERTA • EDMONTON, CANADA • T6G 2M8
403 • 432 • 3824

Dear Consumer:

Thank you for agreeing to participate in this research project. Your participation will include:

(i) completion of the attached brief questionnaire today and returning it in the enclosed postage-paid envelope, and
(ii) an appointment in your home, when you will be asked to imagine you are selecting fabric to reupholster some sofa or chair already in your home. This appointment should take no more than one hour of your time.

You are reminded that your participation in any part of the study is voluntary and that you may withdraw at any time. All responses will be treated confidentially - your name will in no way be associated with any of the information collected.

For your participation, ______________________________ of which you are a member, will be paid $2.00. In addition, your name will be entered into a draw for the fabric you choose when we meet with you in your home.

Please sign the consent form below and return it with the completed pre-test.

Sincerely,

Betty Crown

Betty Crown, Ph.D.
Professor and Chairperson
Clothing and Textiles Department

Kathryn Chandler

Kathryn Chandler
M.Sc. Candidate and Research Assistant

- -

I/We ______________________________ agree
name(s) - please print

to participate in the research project on choosing upholstery fabric, including a choice exercise in my/our home.

Signature(s) ______________________ Address ______________________
______________________ ______________________
____

Phone No. ______________________

TB-CT3505-6

APPENDIX B

(Pre-test, Post-test)

Pre-test

___ ___ ___

The following questions are designed to tell us something about your experience in purchasing upholstered furniture as well as your current knowledge about such products. For questions 4 to 13, we would appreciate your checking the "don't know" response if you do not know the answer or do not understand the question. Please do not guess.

1. How many times have you purchased upholstered furniture (sofa and/or chair) in the last five years? ______

   (Note: purchasing a matching set of 2 or more pieces at the same time would count as only one purchase.)

2. How many times have you purchased upholstered furniture in the last ten years (including the purchases in #1 above)? ______

3. How many times have you purchased upholstered furniture in the last twenty years (including the purchases in #2 above)? ______

For the following six items, please indicate whether you think each statement is true or false.

4. With pile fabrics such as velvet, the denser the pile, the longer the wear life.

   True ______ False ______ Don't Know ______

5. Stiff coatings on the back of an upholstery fabric help the fabric have a longer life.

   True ______ False ______ Don't Know ______

6. Non-expanded vinyls remain flexible for a longer length of time than do expanded vinyls.

   True ______ False ______ Don't Know ______

7. Cellulose fibers, like cotton and rayon, are more likely to burn than wool and nylon.

   True ______ False ______ Don't Know ______

8. All upholstered furniture now sold in Canada must bear labels indicating compliance with flammability standards.

   True ______ False ______ Don't Know ______

9. The fire hazard of upholstered furniture is determined as much by smoldering of cushioning materials and the resulting smoke and fumes as by the rapid burning of covering fabric.

   True ______ False ______ Don't Know ______

Continued ...

For questions 10 to 13, check the ONE answer you think is correct.
If you do not know, please do not guess.

10. Better overall durability of an upholstery fabric results with:

_____ a) tighter weaves and loosely twisted yarns
_____ b) looser weaves and synthetic yarns
_____ c) tighter weaves and highly twisted yarns

Don't Know _____

11. Which of the following statements regarding flocked upholstery fabrics is false?

_____ a) Flocked fabrics, though they resemble pile fabrics in appearance and feel, are made very differently.
_____ b) Flocked fabrics are generally more durable than pile fabrics.
_____ c) Small particles of fibers are attached with an adhesive to the surface of a background fabric and can sometimes loosen or rub off.

Don't Know _____

12. It has been estimated that ignition of upholstered furniture accounts for

_____ a) 0 - 5%
_____ b) 11 - 15%
_____ c) 30 - 40%

of all fire deaths in Canada.

Don't Know _____

13. In an actual fire involving furniture, the ease of ignition and subsequent course of the fire are determined by:

_____ a) the combination of materials used in the upholstery
_____ b) the surroundings of the upholstered furniture
_____ c) the design of the upholstered furniture
_____ d) all of the above
_____ e) a) and c) only.

Don't Know _____

Post-test

___ ___ ___

For the first six items, please indicate whether you think each statement is true or false. We would appreciate your checking the "don't know" response if you do not know the answer or do not understand the question. Please do not guess.

1. With pile fabrics such as velvet, the denser the pile, the longer the wear life.

   True ______ False ______ Don't Know ______

2. Stiff coatings on the back of an upholstery fabric help the fabric have a longer life.

   True ______ False ______ Don't Know ______

3. Non-expanded vinyls remain flexible for a longer length of time than do expanded vinyls.

   True ______ False ______ Don't Know ______

4. Cellulose fibers, like cotton and rayon, are more likely to burn than wool and nylon.

   True ______ False ______ Don't Know ______

5. All upholstered furniture now sold in Canada must bear labels indicating compliance with flammability standards.

   True ______ False ______ Don't Know ______

6. The fire hazard of upholstered furniture is determined as much by smoldering of cushioning materials and the resulting smoke and fumes as by the rapid burning of covering fabric.

   True ______ False ______ Don't Know ______

For questions 7 to 10, check the ONE answer you think is correct. If you do not know, please do not guess.

7. Better overall durability of an upholstery fabric results with:

   ______ a) tighter weaves and loosely twisted yarns
   ______ b) looser weaves and synthetic yarns
   ______ c) tighter weaves and highly twisted yarns

   Don't Know ______

8. Which of the following statements regarding flocked upholstery fabrics is false?

   ______ a) Flocked fabrics, though they resemble pile fabrics in appearance and feel, are made very differently.
   ______ b) Flocked fabrics are generally more durable than pile fabrics.
   ______ c) Small particles of fibers are attached with an adhesive to the surface of a background fabric and can sometimes loosen or rub off.

   Don't Know ______

9. It has been estimated that ignition of upholstered furniture accounts for

   ______ a) 0 - 5%
   ______ b) 11 - 15%
   ______ c) 30 - 40%

   of all fire deaths in Canada.

   Don't Know ______

10. In an actual fire involving furniture, the ease of ignition and subsequent course of the fire are determined by:

    ______ a) the combination of materials used in the upholstery
    ______ b) the surroundings of the upholstered furniture
    ______ c) the design of the upholstered furniture
    ______ d) all of the above
    ______ e) a) and c) only.

    Don't Know ______

APPENDIX C

(Interview Schedule)

___ ___ ___

1. Interviewer: Please record who is participating:

   1. couple ______
   2. wife alone ______
   3. husband alone ______
   4. single male ______
   5. single female ______
   6. other (specify) ____________________________

INTRODUCTION: Thank you once again for agreeing to participate in this project. I would like to remind you that all information you give me will be confidential, and that you can withdraw from the study at any time. In a minute I will be asking you to choose among a variety of upholstery fabrics, imagining that you are about to reupholster some sofa and/or chair already in your home. You should select the fabric you would actually choose if this were a real purchase situation, because your name will be entered into a draw and thus you may have the chance to win the fabric you select.

Would you please tell me which sofa/chair you might be wanting to reupholster?

2. Interviewer: note style 1. contemporary formal ___ 2. informal ___
   3. traditional formal ___ 4. informal ___

   : condition 1. like new ___ 2. somewhat worn ___
   3. quite worn ___

Before we begin, I have one question for (the two of) you (to think about and discuss). If you were actually buying fabric to reupholster this sofa/chair today, what characteristics would you be looking for in your choice of fabric; i.e., what properties would you want the fabric to have or not have?

3. Interviewer: record all attributes as mentioned. (Do not prompt.)

(Respondent 1) (Respondent 2)

Now please imagine that I am the interior design consultant from your selected retailer. I have brought sample books to your home so that you can select your fabric here among your other furnishings. Let me first show you each of them, then you can go through them again as many times as you wish. Assume that all fabrics are in the same price range and are available in approximately the same colors (i.e., do not worry about price and color for now).

(Go through samples: "This is a cotton corduroy," etc.)
Take time now to look carefully through the book and select the ONE fabric you would order. Take as much time as you wish.

4. Interviewer: record relevant comments/questions during choice process.

(Respondent 1) (Respondent 2)

5. Note: Did respondent(s) - comment or ask about special labels _____
look at special labels _____
seem to be unaware of special labels _____
N/A _____

6. SELECTED FABRIC (Interviewer: check one)

1.	_____	A	(Fr, low durability)	7.	_____	G	(FR, low durability)
2.	_____	B	(non FR, low durability)	8.	_____	H	(non FR, low durability)
3.	_____	C	(FR, med. durability)	9.	_____	I	(FR, med. durability)
4.	_____	D	(non FR, med. durability)	10.	_____	J	(non FR, med. durability)
5.	_____	E	(FR, high durability)	11.	_____	K	(FR, high durability)
6.	_____	F	(non FR, high durability)	12.	_____	L	(non FR, high durability)

7. Can you tell me what were the main reasons you chose this fabric?

1. ____________________
2. ____________________ (Do not prompt.)
3. ____________________

Now, for each fabric, I would like you to estimate the likelihood that you would buy it if you were actually going to reupholster this sofa/chair. Can you rate each one on a scale of one to ten, where ten is extremely likely to buy and one is extremely unlikely to buy?

Rating (1-10)

8. **Sample**

A ______ G ______
B ______ H ______
C ______ I ______
D ______ J ______
E ______ K ______
F ______ L ______

Please tell me now where this sofa/chair would be used if it were reupholstered with the fabric you have selected:

1. Living Room ______ 2. Family Room ______ 3. Basement Recreation ______
4. Den ______ 5. Other ______ (Specify ________________________________)

9. Does this mean that:

1. ______ it will get only occasional use;
2. ______ it will get more than occasional, but not constant usage; mostly by adults;
3. ______ it will be used by a family where it will get normal, constant usage?

For respondents in CE treatments 3 & 4 only:

10. You should have received a brochure on upholstered furniture approximately one or two weeks ago. Would you mind telling me whether or not you have read it?

Respondent 1:			Respondent 2:		
	Yes	______		Yes	______
	Partly	______		Partly	______
	No	______		No	______
	Unaware	______		Unaware	______
	N/A	______		N/A	______

I would now ask you to fill in each of these forms. May I remind you once again that all information you give me will be confidential and in no way associated with your name.

Hand out: (a) Post-Test - "These questions may look familiar. I would like you to answer them once again."
(Separately)

(Read instructions at top of page.)

(b) Lifestyles (Read instructions at top of page and point out "strongly agree" and "strongly disagree" columns.)

(c) Demographics (Read instructions at top of page. If two respondents, direct them to respond for both.)

Interviewer:

1. (a) How many people live in your home? ______
   (b) How many adults (18 years & over)? ______
   (c) How many senior citizens? ______
   (d) How many children 12 years and under? ______
   (e) How many children 13-17 years? ______
2. How many people in the home smoke? ______
3. Interviewer note sex of respondents:

   Respondent 1 ______ Respondent 2 ______

That is the end of my questions. I wish to thank you once again for your cooperation.

The purpose of this study was to determine the effect of various education and information strategies on consumers' choice of upholstery fabrics. For example, one of the factors that was varied is the labels on these samples. (*I would like to point out to you now that the special labels on these samples are not currently used in Canada, so do not expect to see them on fabric or furniture on the Canadian market right now. However ...) the Federal Government is considering implementing some type of flammability regulation or labelling program for upholstered furniture. This study was designed to help the Government determine the usefulness of labels.

*Interviewer:

Omit this portion when no special (FK) labels are attached to samples.

APPENDIX D

(Demographic/Socioeconomic and Lifestyle Instruments)

The following items are to provide us with background information about all participants in the study. Please take this sheet and check or fill in the appropriate responses.

	RESPONDENT 1	**RESPONDENT 2** (If applicable)
1. Highest level of education you have completed:		
Elementary		
Incomplete	____	____
Complete	____	____
Junior High		
Incomplete	____	____
Complete	____	____
High School		
Incomplete	____	____
Complete	____	____
Non-University (Voc/Tech, Nursing Schools)		
Incomplete	____	____
Complete	____	____
University		
Incomplete	____	____
Diploma/Certificate (Hygienists)	____	____
Bachelor's Degree	____	____
Medical Degree (Vets, Drs, Dentists)	____	____
Master's Degree	____	____
Doctorate	____	____
2. In total, how many years of schooling do you have? This includes total of grade school, high school, vocational, technical, and university.	____ years	____ years
3. Your Age (in years)	____ years	____ years
4. Your present employment status (check one):		
Employed full-time	____	____
Employed part-time	____	____
Unemployed	____	____
Retired	____	____
In School	____	____
Keeping house	____	____
Other (Specify) ______________________	____	____

5. Your current OCCUPATION: please describe what you do and the kind of firm or agency for which you do it (e.g., clerk in a grocery store; elementary school teacher; professional engineer in own consulting firm).

Respondent 1 ____

Respondent 2 ____

6. What is the TOTAL income of all the members of this household for this past year before tax and deductions? Please check the most appropriate category.

Under $10,000 ____
$10,000 - 15,999 ____
$16,000 - 21,999 ____
$22,000 - 27,999 ____
$28,000 - 33,999 ____
$34,000 - 39,999 ____
$40,000 - 49,999 ____
$50,000 - 59,999 ____
$60,000 - 69,999 ____
$70,000+ ____

3

___ ___ ___

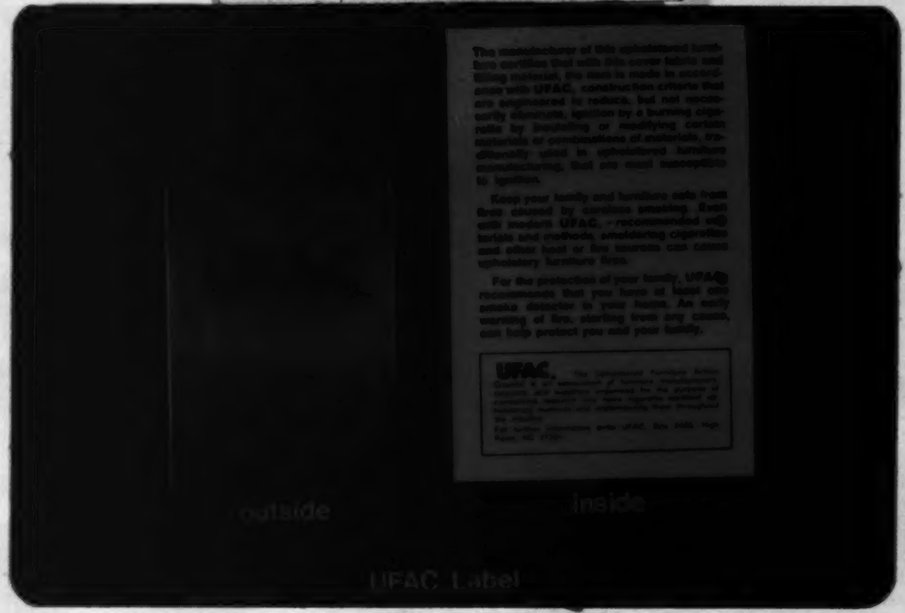
Please read through each of the different statements listed below and circle the one number which best describes the extent to which you 'agree' or 'disagree' with each statement.

	Strongly Agree	Somewhat Agree	Neither Agree nor Disagree	Somewhat Disagree	Strongly Disagree	
I think I have more self-confidence than most people.	1	2	3	4	5	5
My friends or neighbours often come to me for advice.	1	2	3	4	5	
I must admit I really don't like household chores.	1	2	3	4	5	
I shop a lot for "specials".	1	2	3	4	5	
I often seek out the advice of my friends regarding which brand to buy.	1	2	3	4	5	
I don't like to see children's toys lying about.	1	2	3	4	5	
I like to entertain in my own house.	1	2	3	4	5	
I find myself checking the prices in the grocery store even for small items.	1	2	3	4	5	
I usually keep my house very neat and clean.	1	2	3	4	5	
I am more independent than most people.	1	2	3	4	5	
I'd rather be more comfortable and less stylish than the other way around.	1	2	3	4	5	
I find cleaning my house an unpleasant task.	1	2	3	4	5	
People come to me more often than I go to them for information about brands.	1	2	3	4	5	
I like to have the latest styles and colours in my home.	1	2	3	4	5	
I sometimes worry that something I buy will turn out to be a mistake.	1	2	3	4	5	
I usually watch the advertisements for announcements of sales.	1	2	3	4	5	
My neighbours or friends usually give me good advice on what brands to buy in the grocery store.	1	2	3	4	5	
I am uncomfortable when my house is not completely clean.	1	2	3	4	5	
I think I have a lot of personal ability.	1	2	3	4	5	
I would like to redecorate my home often.	1	2	3	4	5	
Accessories are an important part of today's look.	1	2	3	4	5	
A person can save a lot of money by shopping around for bargains.	1	2	3	4	5	
I prefer a simple, classic look to a more fancy or detailed style.	1	2	3	4	5	
Our days seem to follow a definite routine such as eating meals at a regular time, etc.	1	2	3	4	5	
When I'm shopping I look for practical rather than fashionable items.	1	2	3	4	5	
I enjoy most forms of housework.	1	2	3	4	5	
I always look at the label to find out what an item is made of before I buy it.	1	2	3	4	5	
My idea of housekeeping is "once over lightly".	1	2	3	4	5	
I like to be considered a leader.	1	2	3	4	5	33

APPENDIX E

(FR Hang-tags)

COLOURED PICTURES
Images en couleur



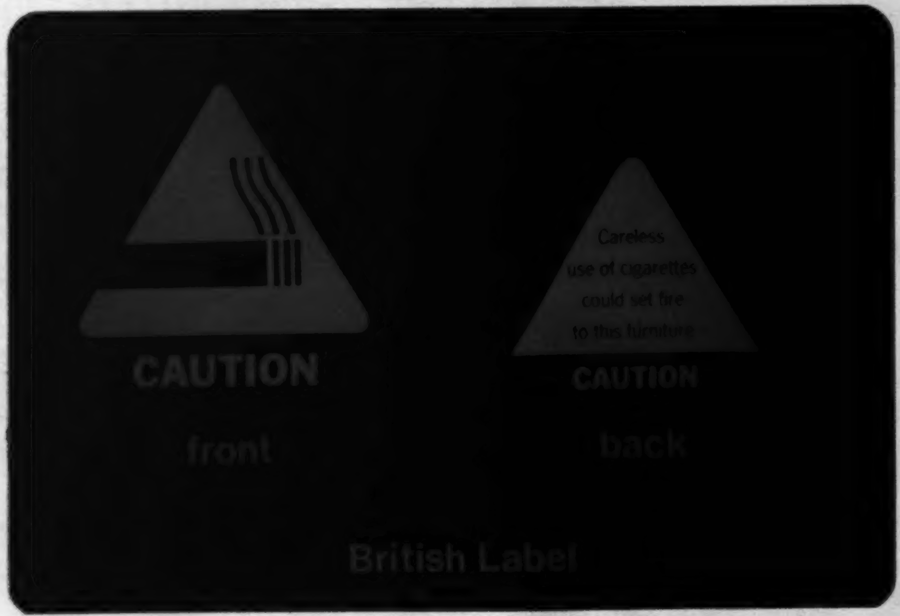
The manufacturer of this upholstered furniture certifies that with this cover fabric and filling material, the item is made in accordance with UFAC. construction criteria that are engineered to reduce, but not necessarily eliminate, ignition by a burning cigarette by installing or modifying certain materials or combinations of materials, traditionally used in upholstered furniture manufacturing, that are most susceptible to ignition.

Keep your family and furniture safe from fires caused by careless smoking. Even with modern UFAC. - recommended materials and methods, smoldering cigarettes and other heat or fire sources can cause upholstery furniture fires.

For the protection of your family, UFAC recommends that you have at least one smoke detector in your home. An early warning of fire, starting from any cause, can help protect you and your family.

UFAC.

UFAC Label



Careless use of cigarettes could set fire to this furniture

British Label

APPENDIX F

(Interviewer Instructions)

General Directions to Interviewers

	Attached Forms for Reference
1. Each time you receive a list of consumers' names you will be given ID, address, phone number, CE treatment; as well as a code sheet with ID and the next 9 items completed.	A B
2. You should phone the consumer as soon as possible and arrange an in-home appointment within the specified time period. Try to ascertain at this point who will comprise the decision-making unit to be interviewed. If the appointment is made much in advance, confirming it again closer to the appointment time might be helpful.	C
3. For each in-home appointment, arrange a file containing one each of:	
- interview guide	D
- post-test	E
- lifestyles instrument	F
- demographic instrument	G
- signature sheet	H
Make sure that the ID number is filled in on each of the first four instruments prior to the appointment. (In addition, you could take along one extra copy of the post-test and lifestyles instrument in case Respondent 2 wishes to complete these. This data will not be used, however, so do not attach ID or code it.)	
4. Before you leave, be sure one respondent in the household signs the signature sheet. These are necessary to prove to the funding agency that the interview actually took place.	H
5. During the choice exercise, it is essential to ensure that the respondents see all pages of the sample book in full. As you show them through the sample book, be sure to lay the book out flat and turn each page over fully so that the next page is completely visible.	D (top of p.)
At this point in the interview it is also essential to record all relevant comments. This will not be easy, but it is very important to do so.	
While respondents are looking at the fabrics do not volunteer any information about properties. However, if they ask about a specific property, answer as simply as you can - eg., if you have CI treatment #2 a consumer might ask if an unlabelled fabric is flame resistant. Point out that it has no label indicating that it is.	
6. As soon as possible after you have completed the interview, code the data on the code sheets according to the enclosed code book.	I J
7. Staple together the two code sheets and the lifestyles instrument.	I,F
8. For each participating household, return:	
all data sheets	D-F
code sheets	I,F
signature sheet	H